Information And Communication Technology

Classes Nine-Ten

NATIONAL CURRICULUM AND TEXTBOOK BOARD, BANGLADESH

Prescribed by the National Curriculum and Textbook Board
as a textbook for classes nine and ten from the academic year 2015

Information and Communication Technology

Classes Nine-Ten

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Preface

The aim of secondary education is to make the learners fit for entry into higher education by flourishing their latent talents and prospects with a view to building the nation with the spirit of the Language Movement and the Liberation War. To make the learners skilled and competent citizens of the country based on the economic, social, cultural and environmental settings is also an important issue of secondary education.

The textbooks of secondary level have been written and compiled according to the revised curriculum 2012 in accordance with the aims and objectives of National Education Policy-2010. Contents and presentations of the textbooks have been selected according to the moral and humanistic values of Bengali tradition and culture and the spirit of Liberation War 1971 ensuring equal dignity for all irrespective of caste and creed of different religions and sex.

The present government is committed to ensure the successful implementation of Vision 2021. Honorable Prime Minister, Government of the People's Republic of Bangladesh, Sheikh Hasina expressed her firm determination to make the country free from illiteracy and instructed the concerned authority to give free textbooks to every student of the country. National Curriculum and Textbook Board started to distribute textbooks free of cost since 2010 according to her instruction.

The government has been working hard to make the life of the people of Bangladesh easy, comfortable and cheerful by implementing the Digital Bangladesh using information and communication technology based education. So Information and Communication Technology subject has been made compulsory from class VI to XII in the National Education Policy. To give the purpose forward the curriculum and textbook have been developed. We hope this textbook will impart information and communication technology literacy to the students and develop in them a keen interest that will play an effective role in making Digital Bangladesh.

I thank sincerely all for their intellectual labor who were involved in the process of revision, writing, editing, art and design of the textbook.

Prof. Narayan Chandra Saha
Chairman
National Curriculum and Textbook Board, Bangladesh.

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First Chapter

Information and Communication Technology (ICT) and Our Bangladesh

After completing this chapter, we will be able to :

- Explain the significance of ICT;
- Explain the contributions of the people related with ICT;
- Explain the importance of e-learning in Bangladesh;
- Explain the necessity of e-governance in Bangladesh;
- Explain the importance of e-service in Bangladesh;
- Explain the importance of e-commerce in Bangladesh;
- Analyse the prospect of ICT in job-sectors in Bangladesh;
- Explain the role of ICT in social networking;
- Explain the positive aspects of ICT in entertainment;
- Explain the future image of an ICT oriented Bangladesh; and
- Design a poster on an ICT oriented Bangladesh.

The 21st Century and Information and Communication Technology

The concept of wealth that prevailed in the last century has radically changed. The whole world rightly acknowledges that the wealth of the 21st century is knowledge. It means that neither agriculture, mineral resources and energy, nor industry and business are the sources of wealth. Human beings are because they are capable of searching knowledge. This concept has reshaped the people's way of thinking throughout the world. They have been taking preparations to face the challenges of the 21st century.

We have already started realising that the world of the 21st century is making its firm standing on a knowledge-based economy. In this century, two more important factors - globalisation and internationalisation have come into being, and ICT is the main driving force behind their acceleration. Now the geographical border of a country transcends and extends to all parts of the world as an effect of globalisation. We can refer to Bangladesh as an example to make the point clear. Millions of Bangladeshis now live all over the world. The place where they live in is as if a small Bangladesh. So, in one sense, the border of Bangladesh has extended beyond its own one. Moreover, they, in spite of being the natives of Bangladesh, are living as the citizens of different countries. 'Internationalism' is the unwritten law of the present world.

Once people had to depend on the blessings of nature for survival. However, by inventing machines and tools, they have lessened this dependence. With the help of machines and technology, they have controlled the world economy after the Industrial Revolution in the 18th and 19th century. The nations, which participated in the industrial revolution, once ruled the world. A similar shift of power has been observed, as the knowledge-based economy has started dominating the world in the 21st century.

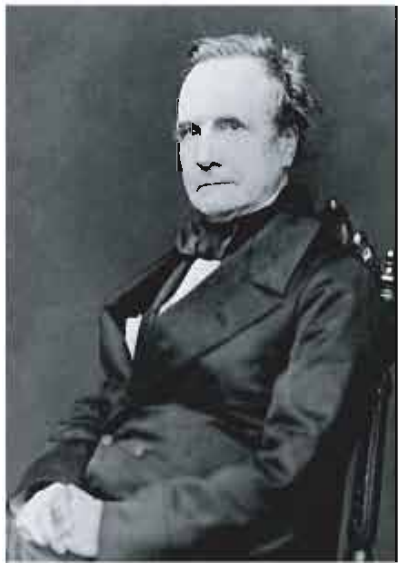
We can realise that we should take adequate preparation for taking part in this revolution. The specific skills for survival are the ability to cooperate and communicate with each other, awareness about the obligations of the citizenry, acumen in solving problems, critical thinking, creativity, and skill in ICT.

ICT Competition

In fact, skill in ICT has emerged as the most important technological skill. Everyone should have the basic computer literacy to survive in the 21st century. Only then, one may have access to its amazing world. Unless students acquire the ICT skills, they may not generate new knowledge by collecting, analysing, and evaluating information. In fact, without the skill, they can never face the challenges in the 21st century and position themselves in the knowledge based society.

Great ICT Personalities

Many scientists, visionaries and engineers have contributed significantly to the development of Information and Communication Technology. Cable connection and the wireless system, acceleration of computers' counting power and the development of microelectronics have ensured rapid growth of ICT.



Charles Babbage

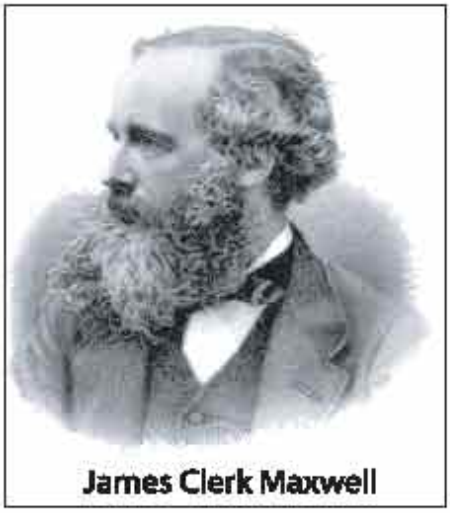
Charles Babbage (1791-1871), an English engineer and mathematician, first introduced and developed computer. He is regarded as the father of the modern computer. He invented Difference Engine In 1991, in the Science Museum of London, an engine was made according to the design of Babbage, and it worked properly as expected and later, he designed a calculating machine called Analytical Engine.

Ada Lovelace

Ada Lovelace (1815-1852), the daughter of poet Lord Byron, first thought about how the process of calculation could be made more effective. She became interested in science and mathematics since her childhood and was encouraged by her mother. When she met Charles Babbage in 1833, she brought before him the concept of 'programming' to use in his analytical engine. That is why Ada Lovelace is honoured as the pioneer of programming concept. Babbage delivered a lecture about his engine in 1842 at Turin University. Then Ada with the help of Babbage, explained the ways how the engine could work. She marked it in a

numerical order, while describing its mode of working. In 1953, when the note was published again one hundred years after the death of Ada, the scientist realised that it was Ada who put forward the idea about the Algorithm of programming.

Important progress was made in physics during that period with the inventions of Babbage and Ada. Scientist James Clerk Maxwell (1831-1879), combining the electric energy and magnetic force, put forth the theory of Electromagnetic Force which opened a possibility of sending wireless messages from one place to another.



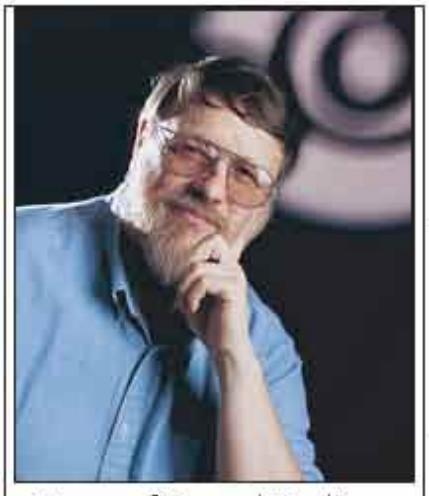
James Clerk Maxwell

Jagadish Chandra Bose

Bengali scientist Jagadish Chandra Bose (1858-1937) became successful for the first time in sending wireless messages from one place to another. In 1895, he successfully did it by using microwave.

Guglielmo Marconi

But, Italian scientist Guglielmo Marconi (1874-1937) succeeded first in doing the same work by radiowave. That is why he is acknowledged as the inventor of radio.

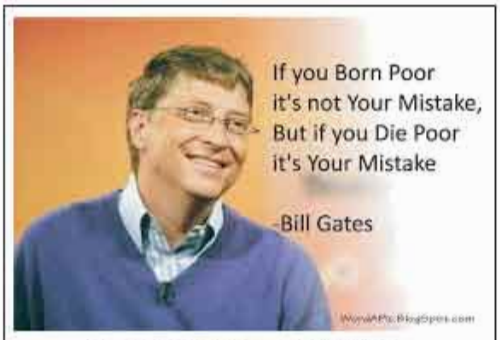


Raymond Samuel Tomlinson

In the 20th century, after the development of electronics, IBM Company was the first to build the mainframe computer after the development of electronics. In 1971, cost-saving computers were made. With the invention of the microprocessor, it became easier to make affordable computers. In the 60s and 70s, using the Internet

Protocol, Arpanet was invented. The inter connection among the computers through network started developing since then, and the invention of the internet was the outcome. In 1971, American programmer Raymond Samuel Tomlinson introduced the first electronic mail communication through ARPANET. He is the pioneer of inventing the e-mail system.

Steve Jobs



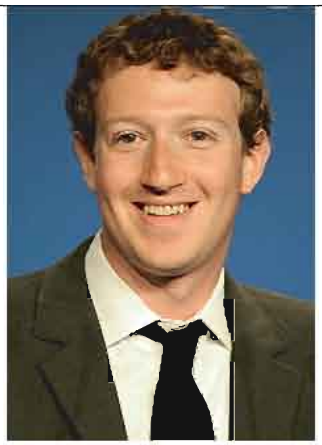
William Henry Bil Gates

After the invention of the microprocessor, personal computer was made by using this device in the USA. Steve Jobs (1955-2011) and his two friends Steve Wozniak and Ronald Wayne started a company named Apple Computer on April 1, 1976. This company is one of the biggest organisations in the world. The development of the personal computer has been carried out by this company.

IBM company put the responsibility of developing the operating system for personal computers on 'Microsoft' of William Henry Bill Gates (born on October 26, 1955). They succesfully developed MS DOS and Windows operating system. At present, most of the computers of the world are run by the operating system software of Microsoft company of Bill Gates.

In 1989, during the development of the internet, a British computer scientist proposed and later on successfully invented information management by using Hypertext Transfer Protocol (http). Sir Timothy John 'Tim' Berners Lee is known as the pioneer of the World Wide Web (WWW). For its development the Internet technology spread out throughout the world. A strong economic field has been created on the Internet and different types of application software have been developed.

John 'Tim' Berners Lee


Mark Zuckerberg

The most popular social networking system in the world is Facebook. A student of Harvard University, Mark Zuckerberg (Born on May 14, 1984) and his four friends are the pioneers of creating the social networking system Facebook. At first, it was used only by the university students, but according to the statistics of May 2014, at least 119 crore people of the world use Facebook. Many people in our Bangladesh use Facebook for social networking too.

E-learning and Bangladesh

For years, knowledge has been acquired across the world in traditional methods. The innovation and development of ICT have brought about changes for the first time in these methods. We have become familiar with the terms like e-learning and Distance Learning. E-learning is the short version of electronic learning which basically means a teaching process by using CD-ROM, the Internet, personal network and TV channels. However, we should keep in mind that e-learning is not an alternative to the conventional way of learning. For example, it is hard to demonstrate in class different scientific and natural phenomena, such as, a solar eclipse, a lunar eclipse, and so on. A teacher may demonstrate these phenomena with images, videos, and graphs with the help of multi-media. The class can be interactive too.

Bangladesh has a huge population, and that is why the class size is usually big. The schools in our country lack skilled teachers, teaching and learning materials, science laboratories, etc. The students do not have a wide scope of doing scientific experiments. E-learning can play a vital role to solve these problems. A lesson conducted by a skilled teacher may be recorded and distributed to hundreds of schools. Different learning materials for teaching a specific subject can be given to students. Teachers themselves may make their lessons more effective and these lessons may be reused in other classes.

Teaching and learning materials are made for e-learning all over the world. Renowned universities of the world have introduced some online courses and

anybody can take any of these courses. A learner can take the course either by submitting his homework or sitting for examination online, and can get the requisite credit. Research is going on to develop the field.

Bangladesh is not lagging behind in e-learning. The ICT specialists of the country have opened some web portals offering courses in Bangla, and learners from any part of the world can take the courses. The ICT oriented, specifically training courses in computer programming, have earned popularity at home and abroad.

E-learning can play a vital role in over-coming the limitations of teaching in Bangladesh. However, it is not a substitute of the conventional teaching method of a classroom in which teachers and students have face-to-face interactions, exchange of opinions, and question and answer sessions. Moreover, students can ask questions, interact, and help themselves in learning something. In addition, teachers and students can assist each other in the learning process and optimise their learning by peer-bonding. By contrast, possibilities of interactions are minimal in e-learning. As e-learning requires little human participation, it may become mechanical. Therefore, in order to make e-learning successful, students need to be very pro-active. E-learning has a wide scope in Bangladesh as we can minimise the limitations in classroom teaching by adopting e-learning. However, implementation of e-learning practices in classroom will require fast internet connectivity, necessary infra-structure, and e-learning materials.

Group Activity

Discuss in group and present how e-learning can play a vital role in the development of education.

E-Governance and Bangladesh

Transparency and accountability are needed for a good governance. A modern, transparent, and accountable governance can be ensured by introducing a digital system. It will ensure good governance, stop the harassment of the citizen, and pave the way of good governance. The application of electronic or digital method in the government administration is called e-governance.

Once, it was very difficult for the examinees and their guardians to collect the result of a public examination. It was even more difficult for the people living in the remote villages. Even two decades ago they could not collect their results a week after the publication of the result. Now they can get it either through the internet or the SMS option of the mobile phone. So, the trouble of instantly collecting the result has come to an end.

Another example of e-governance is the facility of submitting applications to the higher educational institutions with the help of the mobile phone. Previously if a candidate of Jessore wanted to apply to Shahjalal University of Science and Technology, he had to complete a series of formalities. Candidates or their representatives had to travel to Sylhet in order to collect and submit university admission application forms. Now candidates may submit their applications through mobile phones. They need not to travel from one city to another.

District offices of the Deputy Commissioners have E-service Centres in order to ensure easy, affordable, and hassle-free services. Now a service delivery of a services that took 2-3 weeks in the past now takes only 2-5 days. On top of it, digitalisation of the information has reduced the time in decision making by 80% - 90%. Government departments have become transparent and accountable in providing their services and increased their efficiency in issuing copies of deeds and settlement records.

The manual process of paying gas, electricity and water bills is time-consuming and troublesome. Sometimes the busy hours of a day are spent to pay the utility bills. Now the bills can be paid either online or through cell phones. The target of the Government is to ensure better life standards and a hassle-free life for its citizens. E-governance has made some services accessible 24 hours a day, seven days a week, 365 days a year. Some of these services, for example, are ATM services, mobile banking, information services, etc. As a result, citizens may avail the service at their convenience.

In addition, with the introduction of e-services and inter-departmental communication, net-working within the Government has increased. Government employees have also become skilled. As a result, providing faster service has become easier.

Bangladesh has introduced e-governance for a few years. E-service is yet to be introduced to all sectors of the governance. With its successful implementation in every sector, Bangladesh will certainly ensure good governance.

E-Service and Bangladesh

Electronic Reservation Slip — IRCTC E-Ticketing Agent

- This ticket will only be valid along with an ID proof in original. If found travelling without ID Proof, Passenger will be treated as without ticket and charged as per extant Railway rules.
- Valid IDs to be presented during train journey by one of the passenger booked on an e-ticket :- Voter Identity Card / Passport / PAN Card / Driving License / Photo ID card issued by Central / State Govt. /Student Identity Card with photograph issued by recognized School or College for their students /Nationalized Bank Passbook with photograph /Credit Cards issued by Banks with laminated photograph.
- General rules/ Information for e-ticket passenger have to be studied by the customer for cancellation & refund.

PNR No. : 2704087290	Train No. & Name: 14632/ASR DDN EXPRESS	Quota : General
Transaction ID : 6504714229	Date & Time of Booking: 28-May-2012 11:20:13 AM	Class of Travel : SL
From : JALANDHAR CITY	Date of Journey : 29-Jun-2012	To: DEHRADUN
Boarding: JALANDHAR CITY	Date of Boarding : 29-Jun-2012	Scheduled Departure : 23:45 *
Resv. Up to: DEHRADUN	Distance : 384 KM	Adult: 02 Child: 00
Passenger Mobile No: 9872290583	Note :- * Depart time printed on the ERS is liable to change. New time table from 01-JUL-2011	
Passenger Address:- pb2		

FARE DETAILS:

1	Ticket fare	Rs. 282.00	Rupees Two Hundred Eighty Two Only.
2	IRCTC Service charges	Rs. 10.00	Rupees Ten Only.
3	Agent Service charges	Rs. 10.00	Rupees Ten Only.
4	Total	Rs. 302.00	Rupees Three Hundred Two Only.

PASSENGER DETAILS:

S. No.	Name	Age	Sex	Concession Code	Booking Status/Current Status/Coach No./Seat No.
1	RAJ HAWA	61	Female	SRCTWR	CONFIRM/S2/8049
2	USHA	57	Female		CONFIRM/S2/8050
3					
4					
5					
6					

Many government and non-government service providing organisations provide the citizens with temporary and full time services. This might be travelling from one place to another or issuing duplicate records of a land. Before the introduction of the digital system, the services seekers had to meet the service provider, but now they can receive the services through the internet or mobile phones while staying at home. For example, they can purchase tickets through the internet. or mobile phone. People, a few days ago, had to go physically to Kamlapur train station, and stand in the queue before the counters for tickets. This system is still in practice, but now anyone can collect tickets and pay the fares online. Providing services through an electronic system is called e-service. E-service ensures availability of services at low cost in the shortest possible time without much hassle. E-service has already been introduced to several ministries, departments and directorates of the Government of Bangladesh.

The digital edition of textbooks, e-settlement records, e-permit, e-ticket, telemedicine, e-tin registration and income tax calculation, etc. are the examples of e-services.

A. E-permit: It is one of the primary e-services of the country. The sugar cane farmers of fifteen sugar-mills of the country get e-permit through the message option of the cell phone. An e-permit is the official permission of the sugar mills authority for the farmers to supply sugar canes at a fixed time. The harassment of the farmers has come to an end as they receive the information of supplying sugar canes through SMS. The production of the sugar mills has also been increased due to timely supply of sugar canes.

B. **Electronic Money Transfer System (MTS):** Money can be sent at a low cost from one place to another quickly and safely through the electronic money transfer system of the Bangladesh Postal Department. It is possible to transfer BDT 50000 in one minute. This service is available in all post-offices in Bangladesh.

C. **E-settlement Records :** The duplicate of land settlement records can be collected through this service. Previously employees of the land settlement department would supply the information to the applicants from big record books after filling up the prescribed forms. The applicants had to be present physically in the office and the employees of the concerned department would prepare it manually. Because of the e-service, applicants at home and abroad can receive the settlement records, paying the required fees.

D. **E-healthcare:** Physicians in government health centres give advice on mobile phones. That is why government hospitals have been provided with mobile phones. Any citizen of the country can get the advice of any physician. Besides, in some hospitals, telemedicine service has been introduced. Because of the telemedical services, patient in upazila may avail the service and advice of medical specialists in district hospitals on mobile phones.

E. **E-tiketing and Mobile Ticketing of Railway:** Tickets of some intercity trains can be collected either through mobile phone or online. As a result, travellers can purchase the ticket at their convenience without going to the ticket counters of the railway station. They can reach the station just before the departure of the train and collect the printed ticket from a particular counter.

E-commerce and Bangladesh

There is no substitute for trade and business for the progress and creation of jobs in a country. A change has been brought about in the business sector of Bangladesh for the electronic innovation of digital technology and the internet and exchanging process besides paper currency. Running a business through an electronic medium is known as e-commerce.

There are some terms and conditions in business. Firstly, the sellers must have the commodity. Secondly, the buyers will pay the price of the product. This transaction requires direct communication of the seller and buyer. However, in the era of internet, nowadays sellers may create a website and display the

images of their products. The buyers, after choosing the commodity, pay the price and get it. The buyers have the facilities to pay the price through debit and credit cards. They can pay through mobile banking even. Thirdly, on receipt of the payment, the sellers either deliver the products themselves or by the courier. Another payment method is through courier service after receiving the price.

The bill payment can also be done in the Cash on Delivery (COD) method, which is different from mobile banking and debit or credit card payment. The purchaser choose the product from the website of the seller and orders for supply. The seller after getting the order sends it to the buyer who pays the bill after receiving it.

E-commerce has been gradually increasing in Bangladesh since 2011-12. Now everything including books, garments, food, luxurious goods, etc. is sold or bought through e-commerce. Two types of establishments are noticed in e-commerce like a conventional business. One kind of establishment sells only its own products and another kind sells the products of different companies. You have already watched advertisements of some websites on the internet, television and in the newspaper.

ICT in the Job Sector of Bangladesh

Nowadays, the multifarious use and impact of ICT in the job sector is noticed in Bangladesh like other countries. The impact and capacity of ICT are gradually increasing. Two types of impact of ICT are noticed. First, the introduction of ICT in the prevailing working sectors has enhanced the skills of the employees and extended the market. Second , ICT itself has created new job-opportunities.

The use of ICT in the prevailing existing job sector and old business sectors, on the one hand, has enhanced the efficiency, transparency and accountability of the professional groups; on the other hand, has increased the standard of service. Skill in ICT is now regarded as the elementary qualification for any job. Employees of banks, insurance, multinational companies, and government sectors need to be skilled in word processing, presentation software, internet browsing, email management, analytical software, etc. In addition, they have to develop expertise in a specific software product, such as banking software. On top of it, ICT has created a large job market of making hardware, software, developing websites, maintenance, etc. Now it is a big market for the skilled workers who can work at home or abroad and set up their own ICT firms.

A major part of the task can be accomplished at home. Many people earn foreign currency for the country through outsourcing.

Social Networking and ICT

Social mobility and development require communication amongst individual human beings. So, social communication means interaction among people through virtual communication and networking. In other words, what people create and exchange to communicate and express by using the internet and ICT is called social networking. Now this communication has become easier, cost-effective and usually safe. By using the internet, e-mail, mobile phone and messaging system, blogging and platforms of social networking, the ICT based social networking has been made easy. Platforms have been set up on the internet, known as social networking. Two most popular social networking websites are Facebook and twitter.

- **www.facebook.com:** Facebook is a website of the social networking system. Mark Zuckerberg along with some of his friends launched this site. Anyone can be a member of Facebook without any subscription. The users can add friends, send messages, update their personal information and give status and share information with others. Besides, audios and videos can be sent through it. Any organisation can open its home page on Facebook, and at the same time, like-minded people can form a Facebook group. According to www.stastica.com report of March 2015, the number of Facebook users in the world was 1415 million.
- **www.twitter.com:** Twitter is a social network too, but it has a basic difference with Facebook. The users have to express themselves and exchange opinions within 140 characters. That is why it can be called a website of micro blogging. The message of 140 words is called the 'Tweet'. The tweets of Twitters are displayed on their profile page. The members of the twitter can follow other members to read the tweets. Those who follow a member are called followers.

Entertainment and ICT

With the development of ICT, a new era in the entertainment world has started. It has occurred in two ways. First, how people consume entertainment has fundamentally changed. Second, different media of entertainment have qualitatively changed.

Let us see first how individual media consumption habit has transformed in response to the changes in ICT. Once, people had to go outside for

entertainment. If they wanted to enjoy a film, they had to go to the cinema hall to enjoy a film; to the playground to watch a football match; to a concert to listen to music. Nowadays, there is no need to go outside for entertainment. Radio was invented first, and then the television. The computer came eventually. The Internet is the latest addition to the computer. We have discovered that people can enjoy all kinds of entertainment within the four walls of their home. When computer first came into being, it was only used for computation and calculation. Only the big organisations and the government could afford computers. However, with the development of technology, computers have become easily available and people have started using them for their personal purposes. Since computers have become more sophisticated with processors, huge storage, and considerable memory, they can be used not only for writing or calculation, but also for entertainment. Perhaps, people use computers mostly for their entertainment. Composing a song, making a movie, and editing a photograph - all can be done on computers. Because of the development of ICT, changes have come to the media and forms of entertainment. Since songs can be digitised and converted into MP3 format, they can be played on computers. Similarly, we can watch videos and movies on computers. A huge volume of data can be stored on CD or DVD. Watching movies on DVD players without going to the cinema hall is a very common practice nowadays. Internet with faster speed has become easily available due to 'fibre optic network'. As a result, people do not have to depend on audio CD or DVD either for listening to music or watching films. On top of it, programmes in different radio and television channels can be directly accessed through the Internet. Sometimes recorded programmes are also available on the Internet. Hence, viewers can access these programmes according to their convenience.

New forms of entertainment have appeared with the development of ICT. Computer games are one of them. Big industries of computer games have been established all over the world and the experts of these industries are innovating computer games of various sorts. The extensive popularity of computer games demonstrates its immense success as a new medium of entertainment. One of the reasons for their success is that computer games entertain people of all ages with different preferences. These games can be played with others, the computer itself, or even with gamers in a remote place via network. In fact, it should be noted here that excessive and compulsive use of computer or video games may become so strong that it can easily turn into an addiction. That is why people around the world are warned about the negative consequences of compulsive computer or video gaming. Development in ICT played a vital role

2019

in the emergence of new forms of entertainment. Once, making animation or cartoon films was very difficult. It has become easier for ICT and high-end/ super computers. Not only that, innovations done by creative designers have brought about changes to graphic works. Digital actors and actresses have been created on computers for graphic movies that are no longer dependent on real actors and actresses. Use of high-end/ super computers in creating imaginary dinosaurs and aliens for popular commercially successful films is very common nowadays.

In summary, ICT has not only created new forms of entertainment, but also made them accessible to the mass. Most importantly, ICT has revolutionised the entertainment industry and its ultimate future in the entertainment industry is beyond one's imagination.

Digital Bangladesh

The present government has undertaken a plan to establish 'Digital Bangladesh' for the first time. Bangladesh conquered its independence through enormous bloodshed in the liberation war of 1971. We will be celebrating the golden jubilee in 2021, and that is why we are determined to take our motherland to the highest peak of success. 'Digital Bangladesh' is the means to materialise the vision. The Government and general citizens have taken initiative to materialise the dream.

First we should know what we mean by 'analogue' and 'digital'. An analogue signal is a kind of continuous and infinitely variable representation of data or information. As an example, we may discuss about the measurement and record of daily temperature. Temperature varies throughout the day and the temperature inside the home can also be much different than the outside. Representation of any small amount of change in the temperature through a signal may be called an analogue signal. However, an analogue signal may not always give information with precise accuracy and reliability.

A digital signal converts the information into numbers (digits) and displays and stores the information in numbers. Hence, it is called the digital signal. Since the digital signal indicates the value of the quantity in a digital format, that is, in a numerical form, it gives more accurate information than the analogue signal. It is generally quicker and easier to read than the analogue one. For example, a watch, with a high-precision movement of an hour hand, a minute hand and a second hand, gives an analogue signal as a measure of time passing. By contrast, a watch, with an electronic display of time in numbers, gives a digital

signal. The phrase 'Digital Bangladesh' is not used to indicate Bangladesh as a 'Computer Oriented Country'. Its implication is more extensive. Digital Bangladesh refers to a modem Bangladesh, developed with the help of ICT. The objectives of Digital Bangladesh are to ensure better education and health and more job opportunities and eradication of poverty. Therefore, in order to fulfill these objectives, it is important to bring changes to our old conventional mind-set and be positive and inventive. The fundamental aim underlying Digital Bangladesh is to ensure democracy, human rights, transparency, accountability, and justice with the maximum utility of technology. The main thrust of the objectives is to improve the standard of living of citizens from all social classes. In order to fulfill the objectives of Digital Bangladesh, the Government has focused on four specific factors: human resource development, participatory citizenship, civil services reformation, and inclusion of technology in everyday life.

Bangladesh has started developing information and communication technology late in comparison with other countries. That is why Bangladesh is significantly lagging behind. Even though the significance of ICT was not realised, nowadays ICT is getting proper importance. We are getting high speed internet connection as we are connected to the submarine cable.

There is a positive side of the extension of technology. If a nation lags behind at a moment in any particular technology, it does not mean it will stumble all the time. It may leapfrog other countries. Bangladesh is trying her level best to be equal with other countries in her use of technology.

The infrastructure for information technology has started to be constructed in the country by the present government. Setting up the fibre optic connection throughout the country, an initiative is taken to provide the internet service to remote area. The number of telephone users was negligible in the country just ago one and half decades, but now every adult uses a phone. Information service centres have been opened at the union level, the post offices of the remote areas are transformed into e-centres that provide the service of mobile money transaction. The district information cell and the national information cell with the union information centres are important additions to the infrastructure of the country. The tasks like registration of admission test, getting the result of public examination, and purchasing train tickets are being done regularly on the mobile phone. ICT courses are included in the curriculum of schools and colleges. This textbook is an example of that. Computer Science is being taught in the colleges and universities. The younger generation of the country is joining the software companies along with setting their own firms, and a large number of young people are strengthening the economy of the country through outsourcing.

12th May, 2018 is a very important day for us. In this day, Bangladesh, as 57th state of the world, has launched its own satellite 'Bangabandhu-1' in the space. As a result we have moved one step ahead to digital Bangladesh. Bangladesh will be benefited in the field of Education, Health, Agriculture, weather forecast and economic advancement by using this satellite. This will be used in satellite based television services as well as ensuring our National Security. For this satellite it will be easy to spread internet and telecommunication facilities in the remote areas of the country. By using Bangabandhu-1 Satellite, we will be able to save and earn foreign currency in the Information and telecommunication sector.

The success stories, however, do not indicate that we have reached our target. We have to walk a long way to achieve the goal. As most of the people of our country live in the villages, the first step to 'Digital Bangladesh' is to bring these people to the network of ICT services. So, we have to build up large infrastructures. A skilled manpower is required to avail of the opportunity of ICT to the utmost level. So, we should develop expertise in this sector. The standard of education of colleges and universities should be enhanced and a good number of students should be skilled in ICT. Transparency should be ensured through e-governance. The new generation should be encouraged to use their innovative power, and a co-ordination between universities and information and communication technology is must that we can make a real 'Digital Bangladesh'.

Activity
Design a poster about what to do for building up 'Digital Bangladesh'.

Exercise

1. In which year was London Science Museum successful in making the engine capable of calculating mechanically?
   A. 1833 B. 1842
   C. 1953 D. 1991
2. Which scientist made it possible for us to do office from home?
   A. Charles Babbage B. Ada Lovelace
   C. James Clerk Maxwell D. Jagodish Chandra Bose
3. Who is the inventor of Facebook?
   A. Steve Jobs B. Bill Gates
   C. Mark Zuckerberg D. Tim Berners Lee

4. Because of the use of ICT in government jobs —
   i. government services can be easily accessed within the shortest possible time;
   ii. the standard of government service can be enhanced;
   iii. government service can be availed even in holidays;

Which one is correct?

A. i & ii
B. i & iii
C. ii & iii
D. i, ii & iii

Read the section below, and answer questions 5 & 6:

Shumon fell sick while on a pleasure trip at St. Martin. When he contacted a doctor in Dhaka, he advised him to get himself admitted soon to a hospital. The doctor of the nearby hospital arranged his necessary treatment after consulting with a medical specialist in Dhaka.

5. The technology through which the local doctor can get advice of a specialist doctor is_
   i. tele-medicine
   ii. E-healthcare
   iii. E-commerce

Which one is correct?

A. i & ii
B. i & iii
C. ii & iii
D. i, ii & iii

6. Which technology played a vital role for the treatment of Sumon?
   A. ICT
   B. Television
   C. Robot
   D. Computer

7. Milon of Jadurchar, Roumari of Kurigram intends to obtain higher education staying at home. How can ICT help him?

8. What possibilities have been created by ICT for solving unemployment in Bangladesh? Discuss.

Second Chapter

Computer and the Security of the User

After completing this chapter, we will be able to:

- Explain the importance of computer maintenance;
- Differentiate between software uninstallation and software deletion;
- Explain the importance of using password and anti-virus for the security of computer, data and software;
- Explain the difference between general and social sites;
- Analyse the consequence of the excessive use of the internet;
- Explain the negative aspects of playing games excessively;
- Describe the event of software piracy;
- Explain the importance of copyright law;
- Explain the necessity of security with reference to the free flow of information in the internet;
- Expain the importance of troubleshooting in computers;
- Install and uninstall software following the right process;
- Prepare a unique password; and
- Troubleshoot the usual problems of the computer.

Importance of Software in the Maitenance of Computer

Story 1: Raina was very intent on having a laptop from her father after getting admission to the college. As her attainment in the first term examination was good, her father bought her a branded laptop with core i5 processor. Raina was impressed with the quality and speed of the laptop. She installed many pieces of software within a few days. However, she noticed a gradual decline in its performance. After one year, she observed that the laptop was running too slow and it was irksome working on the computer. After some days, she made a capricious demand to her father for purchasing another one for her.

Story 2: Ankon has recently taken internet connection for the computer. Now he frequently browses the Web and has benefitted greatly from the sites with the information related to his study. Besides education, he uses the internet for sending emails, listening to music, and watching movie. Recently he has found the computer often restarting without any prior notification. In addition, the internet browser opens different sites without any command. One day, he inserted a memory stick into the USB connection port on his computer. He was shocked to find out that his files turned into 'shortcuts'. He could not even locate the original files.

What do you understand from the above events? Is it similar to your experience? You have already known many things about Information and Communication Technology this time, and you have understood that the processor and software are the main components in ICT. A new computer, be it a desktop, laptop or tablet, usually runs fast, but after some days, it gradually slows down. As it gets old, it becomes slow. Sometimes, you have to wait for a long time after giving a command. Sometimes the situation is so bad that you want to buy a new one.

What is the way to resolve this situation? Here lies the importance of computer maintenance. You have to learn a little about computer maintenance in the junior classes. Most of the people do not like the task of maintaining ICT or technological devices. However, it is an important task. If you want to keep your ICT device operative, you have to maintain it. You need not to be an expert for that job. We are talking about software-oriented maintenance of ICT devices.

If the Windows Operating System of Microsoft Company is used in your ICT device (in almost all the computers of the world, Windows Operating System is used), you have to check its status and update the operating system all the time. If the device is connected to the internet, the updates are done automatically. Other operating systems provide a similar kind of facilities too. In spite of that, you have to use registry clean up software to keep the machine fast. If you do not use this software, your machine will not work properly and it will be a matter of annoyance for you.

Besides, whenever the computer is used, some temporary files are created. If these files are not erased for a long time, they occupy a lot of space in the hard disk and slow down the speed of the computer. That is why we should erase the temporary files with a software. It will make some space free and speed up the computer.

Nowadays, the use of ICT device can not be imagined without the internet connection. Many cookies and temporary internet files are saved in the cash memory of the internet browser when you surf the net. It slows down the computer. If it is not possible to clean up the cash memory everyday, it must be done in every few days' intervals. A piece of software can help you to get the job done.

Using ICT device without anti-virus, anti-spyware and anti-malware is very risky. It is an important maintenance activity that protects the users' device from the attack of virus, malware and spyware, and they can safely use their devices. Now many anti-virus, anti-malware, and anti-spyware software can be downloaded free of cost from the internet and used to protect the computer. Even these pieces of software can be updated from the internet.

The computer users can run disk clean ups and disk defragmentors to keep the usual speed of the computer. These programmes are attached with the operating system. These two pieces of software clean up the space of hardware and arrange the files in such an order so that the speed of the computer is kept up.

Installation and Uninstallation of Software

We know that the ICT devices are operated with software. These pieces of software have to be installed in the computer or in other devices. When we purchase any ICT device, the seller asks us about the software that we require. After installing the required pieces of software along with operating software, he gives it to us. In this way, we can use ICT devices, for example, computer, tablet, smartphone, etc., as we require.

The process of installing operating system software is complex, and expertise is essential for this task. We will have discussions on it in your next class. In addition to the operating system software, we need different types of software. These pieces of software should be installed on the basis of our needs.

Installation of any software requires special attention to the issues given below:

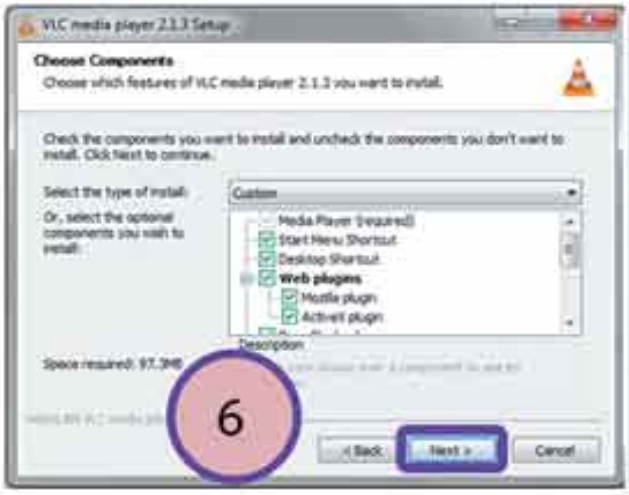
- Whether the hardware of your device supports the pieces of software to be installed;
- Whether there is anything important in 'read me' file; if any, read it;
- Whether all other works are stopped during the installation; if not, the installation process often gets hampered;
- Whether the anti-virus software is turned off, and
- Whether the administrator of the operating system has the permission or not; (Almost all the devices have the permission except some particular ones. We will discuss in details in the next class.)

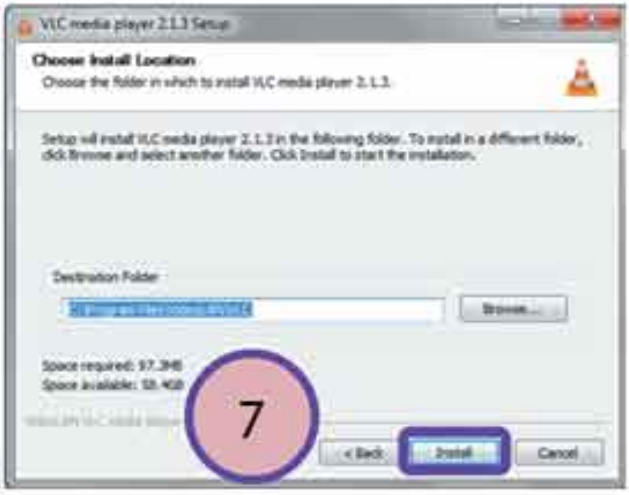
Installation of software, except the operating system one, depends almost on the operating system itself. However, the process of installation is almost the same. We need the soft or the digital copy of the piece of software to install it. It can be installed from CD, DVD, pendrive, or the Internet. In most of the cases, a programme called 'Auto Run' is attached with the software. When you insert a CD and DVD or connect a pendrive to the USB port, the 'Auto run' programme becomes activated and the piece of software seeks permission to set up. Follow the next steps after giving the permission and the piece of software will be installed in your computer. After restarting the device, you will be able to use the programme.

The steps of installing a piece of software is shown below:
Double-click the set up file of the piece of software. The following figare-1 is a set up file. Double clicking on it will start the installation.

VLC media player 2.1.3 Setup
Welcome to the VLC media player 2.1.3 Setup Wizard
This wizard will guide you through the installation of VLC media player 2.1.3.
It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.
Click Next to continue.
Next >
Cancel
4

VLC media player 2.1.3 Setup
License Agreement
Please review the license terms before installing VLC media player 2.1.3.
Press Page Down to see the rest of the agreement.
GNU GENERAL PUBLIC LICENSE
Version 2, June 1991
Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.
Preamble
The licenses for most software are designed to take away your
< Back
Next >
Cancel
5


VLC media player 2.1.3 Setup
Choose Components
Choose which features of VLC media player 2.1.3 you want to install.
Check the components you want to install and uncheck the components you don't want to install. Click Next to continue.
Select the type of install:
Custom
Or, select the optional components you wish to install:
Media Player (required)
Start Menu Shortcut
Desktop Shortcut
Web plugins
Mozilla plugin
ActiveX plugin
Description
Space required: 97.3MB
< Back
Next >
Cancel
6


VLC media player 2.1.3 Setup
Choose Install Location
Choose the folder in which to install VLC media player 2.1.3.
Setup will install VLC media player 2.1.3 in the following folder. To install in a different folder, click Browse and select another folder. Click Install to start the installation.
Destination Folder
Browse...
Space required: 97.3MB
Space available: 58.4GB
< Back
Install
Cancel
7

VLC media player 2.1.3 Setup
Completing the VLC media player 2.1.3 Setup Wizard
VLC media player 2.1.3 has been installed on your computer.
Click Finish to close this wizard.
Run VLC media player 2.1.3
Visit the VideoLAN VLC media player Website
8
< Back
Finish
Cancel

The steps can be followed for software installation:

Activity

Following the steps, install a piece of software suggested by your teacher.

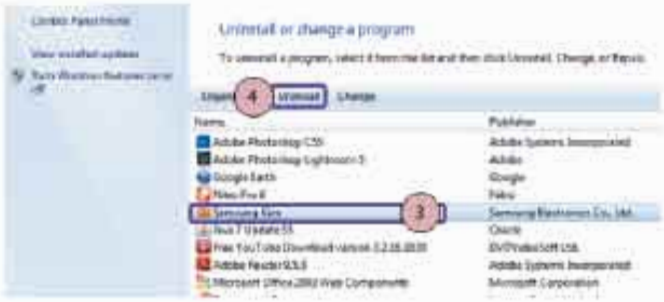
Installation of Software

Now you have learnt how to install a software. Suppose that you do not need to use the software anymore. What will you do then? Most of the users keep the software in the hard disk. However, it occupies a space and creates problem to run the ICT device smoothly. Therefore, it is wise to uninstall unnecessary software.

How will we uninstall the software? The Operating System Software helps us to get the task done. The nature of all kinds of Operating System Software is almost same. However, it is easier to uninstall software from a device run by the android operating system, especially in the touch-screen smartphones. Select the application from the settings and touch the particular software. A menu will be viewed on the screen. Click the space where uninstall is written and the piece of software will be uninstalled.

The following steps should be followed to uninstall a software from a computer or an ICT device run by Microsoft Windows Operating System.

Click the start button and go to the Control Panel. Then double-click the 'Add or Remove' or point to uninstall a programme.



Click Uninstall of the programme that you want to remove, and uninstallation will start instantly. If the bulk of the file is large, it may take longer. Usually the computer needs to be restarted after the uninstallation of software. Be careful before uninstalling any software; or else, uninstallation of a programme may make it impossible to run the computer without its reinstallation. Therefore, you must be careful.

Activity

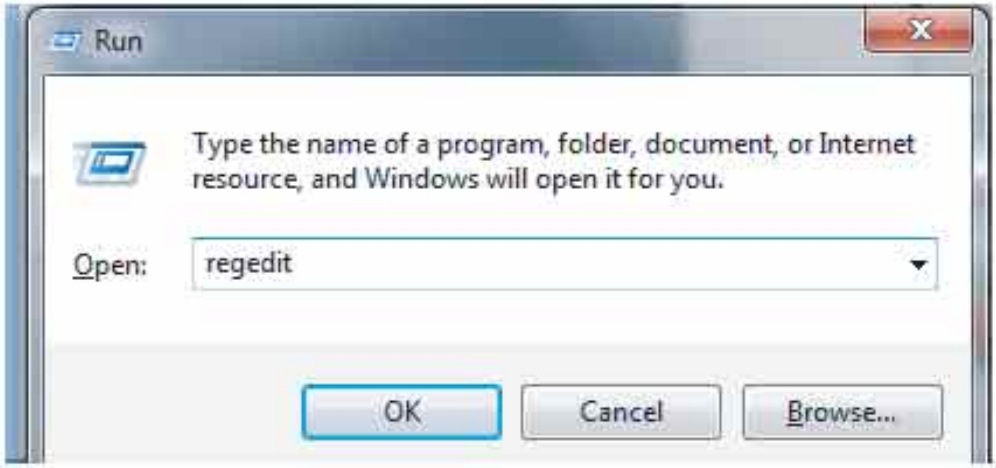
Following the steps, uninstall a piece of software suggested by

Deletion of Software

We know that deleting means erasing something. In fact, by uninstalling a piece of software, we delete it from our JCT device. What will we do with 'delete' command then? A software once installed in the JCT device cannot be uninstalled completely, unless it is deleted by following the recommended process. Or else it creates problems. Some parts of the uninstalled programmes are dumped in the Registry file of the operating system. However, it is possible to delete any programme following the steps shown below. We should also be careful in doing the task.

The steps to be followed to delete:

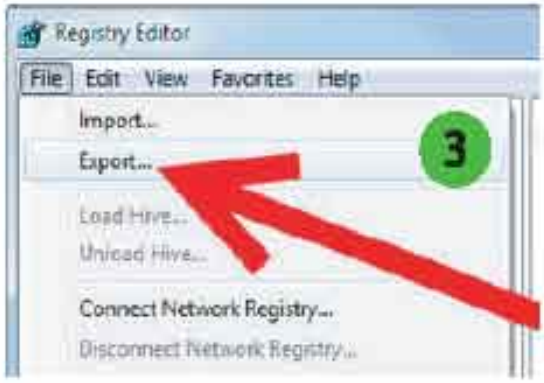
At first, uninstall the piece of software as per the previous instructions, and follow the next steps:



1. Pressing +r, activate Run command. Write 'regedit', and press enter.

2. Enter the 'file' menu.

3. Click 'Export'.

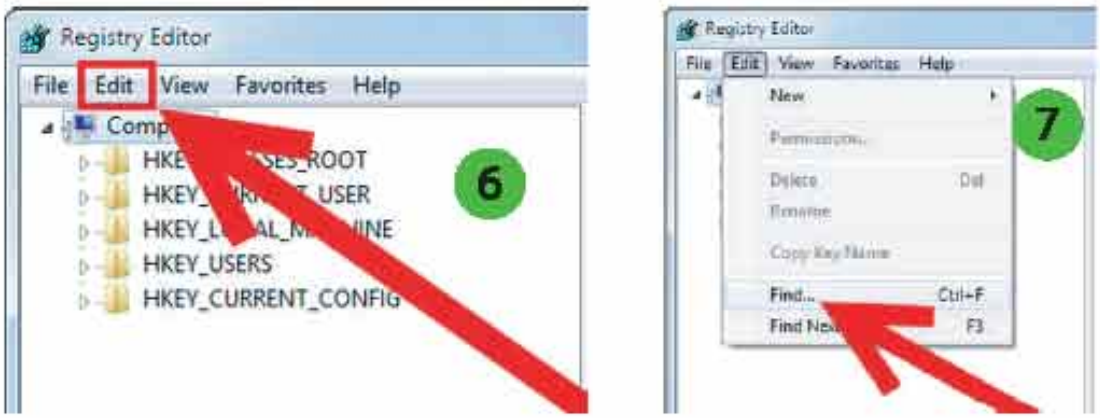


4. The drive that contains the operating software, that is 'C', should be selected.

5. Save the file. It is very important. If any error is made, the system may be repaired.

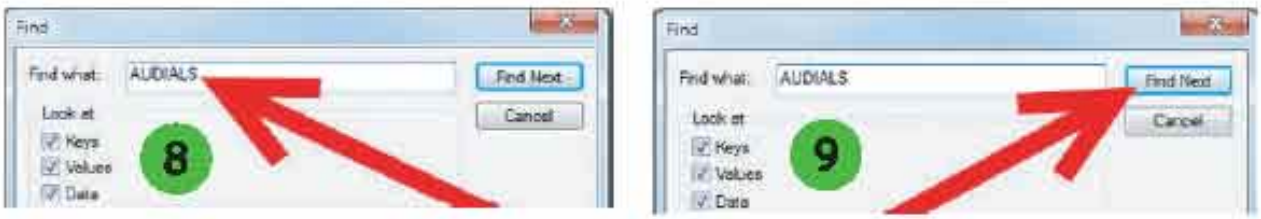
6. Enter 'Edit' then.

7. Point to 'Find'.

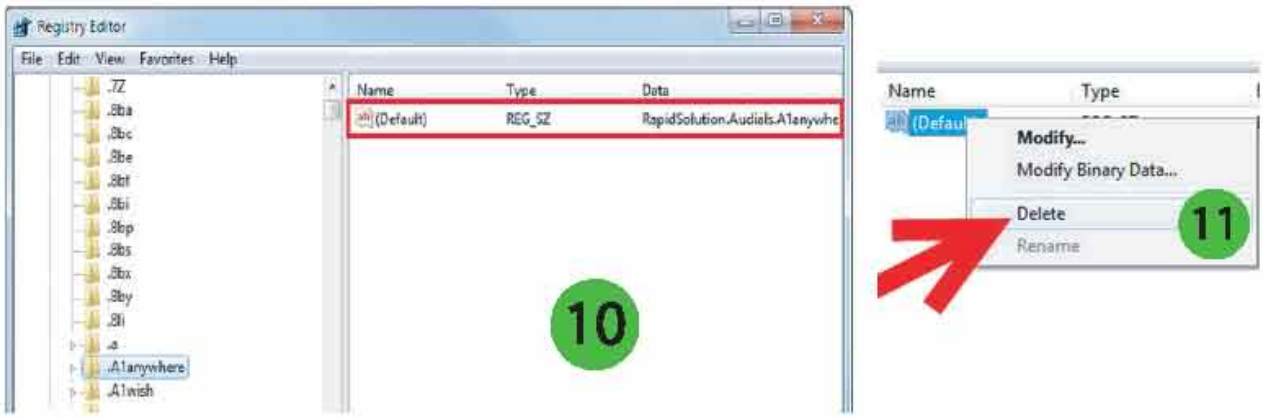


8. Find out the name of the software to be deleted, for example, 'Audials'.

9. Click 'Find Next'.



10. Select in this way.



11. Pressing the right button of the mouse, click the 'Delete' option.

12. Finally press 'F3' of the keyboard and delete all the files having that name from the Registry. In this way, the entire process of deleting will be completed.

Group Activity

Comparing uninstallation and deletion, present it.

Security of your Computer : Computer Virus and Antivirus

We have already learnt many things about the computer virus. In spite of that, we should learn more, keeping in mind the security of our computer. It harms the computer. Just as the virus infects the human body, the computer virus infects the computer. The full form of 'VIRUS' is 'Vital Information and Resources Under Siege' which indicates taking control of important information or damaging something. It was named by Professor Fred Cohen, a renowned researcher of University of New Haven. A virus is a kind of software that attacks data and information, and it has the power to increase its number. When a virus enters the computer, it gradually increases in number and attacks the data stored there, and finally makes the computer unusable infecting the entire device. For example, a booting virus attacks the booting sector of the hard disk. Stone, Vienna, CIH, Folder, Trojan horse, etc. are some most common viruses.

If the ICT device is somehow infected with virus, it gradually increases in number. A virus infected file may enter a virus free computer or ICT device through a CD, pendrive or any other devices. The virus occupies the memory. It stays there even after the computer is turned off. Installation of a virus-infected programme or software also infects the ICT device in the same way. In this way, a virus free computer or ICT device is infected with virus. The same thing happens when a virus infected programme or a software is run in a computer.

In this way, the virus, which is occupying the memory, attacks other files and programmes. Some viruses instantly infect all the existing files and programmes, and some viruses infect only new programmes and files. Thus, the virus deletes files and corrupts programmes, and causes a serious damage to the machine. In this way, a virus free computer is gradually infected with a virus, and it may spread to other computers through the CDs used in the infected machine, hard disk and the Internet.

The symptoms given below indicate that the computer and ICT devices are infected by a virus.

- Opening a file and progamme takes longer than the usual time;
- The memory has little space, leading to a slow performance of the computer;
- Showing unexpected messages incompatible with the works while running the computer;
- Installation of a programme takes longer than the usual time;
- The running files take more space;
- The machine shuts down during booting or working time;
- The names of the folders are replaced with cryptic names;

A virus can cause the following damages:

- It can erase any save data or file;
- It can corrupt data;
- Abrupt and unexpected messages can be viewed on the computer;
- The display of the computer monitor can be corrupted;
- The entire system can be slowed down;

What can we do to get rid of this situation? An anti-virus can relieve us from this problem. An antivirus is the preventive of computer viruses. If the system is infected with a virus, it should be wiped out. An antivirus utility is forced to prevent virus infection. At first, these utilities find similarities with the samples of viruses in the infected computers. The antivirus software by using its experience repairs the original programme. An effective antivirus can wipe out hundreds of viruses. When a new virus comes into being, update the antivirus to enhance its power and effectiveness. As a result, it can destroy a new virus. Now, there are a lot of antiviruses that can identify, prevent, and wipe out viruses. Nowadays, the antivirus software remains attached with every Operating System Software. Besides, the existing antiviruses destroy the viruses before the attack or warn the users. Therefore, the anti-virus software developed nowadays is more effective than the one used in the past. So, we should keep the antivirus updated.

Now, we can download an antivirus software free of cost from the Internet to get rid of virus-attack, and after installing it, we can ensure the security of the devices. The names of some trustworthy antivirus are given below:

- AVG antivirus software (Downloading Website: www.avg.com)
- Avira antivirus software (Downloading Website:www.avira.com)
- Avast antivirus software (Downloading Website:www.avast.com)

We can follow the steps mentioned below to protect our ICT device from viruses:

1. CDs, pendrives, memory cards etc. used in other computers should be cleaned and made virus-free before they are used in your own computer;
2. The software used in other computers should be virus free before it is used in your own computer;
3. Any file copied from other computers needs to be cleaned by the antivirus software before you use it in your computer;
4. Be careful when you install a piece of software in your compute from the Internet. If the downloaded software contain any virus, that may infect your virus free computer;
5. Do not install any software used in other computers or devices;

6. Always keep an updated antivirus software in your computer, so that prior warning message can be received before a virus starts attacking the computer. As a result, the computer may be disinfected right away following the recommended process;
7. Data or files of everyday use should be saved in different disk or pendrive as a back up, but the disk or pendrive must be virus free;
8. Be careful in exchanging emails. Don't open any email from a doubtful source. If you open it, make it virus free before opening;
9. Be very careful and check for viruses before using game files;

Password

Why do we lock the door when all the family members go on an outing? We do it for the security of the house. Think a bit about the lock. Anybody can not open the lock by using any key because different locks have different keys. A lock cannot be opened with a different key. Thus, we ensure safety of our home and other valuable things. Now, we see a kind of lock with digits. The lock is opened by matching the digits. The digits work as the key. However, in an age of digital technology, we have to think over the security of many other things. Perhaps you have understood what we are talking of. We are talking of the security of our data and information. In an age of ICT, we have to use a lock for the security of our important data, information and the software. The name of this lock is password.

Perhaps you have already learnt to create a password and use it. ICT is being used everywhere now. Our country is not an exception. As its use has been extended, the question of security becomes important. All of our personal information, such as bank account, income tax, job, etc. have come under the digital system. Besides, our ICT devices such as computer, laptop, tablet or smartphone are operated with software. When we use the Internet, we can communicate with the remote parts of the world. Similarly, anyone can communicate and share information with us from anywhere. In this way, our personal information can be transformed to others or our ICT device may become susceptible to hacking or computer security vulnerabilities. We can ensure security to prevent this situation. There is no alternative to secure our information and protect the software of our device. If it is protected with a password, nobody can steal our information or damage our device. But, we

should remember one thing that if anybody can steal our password, he can steal our information too. Even, he can destroy it. It is like opening the lock by using a duplicate key. Therefore, we should be skilled in creating password. We should not create any password that can easily be guessed by others or easily forgotten.

As most of the users create passwords like 123456 or 654321 or abcdef, it becomes easy to steal this type of password. Considering the significance of data or information, it is important to create a unique password.

The security along with secrecy of a password ensures the security of data and information saved in a server, computer or ICT device.

If your password is not unique,

1. Viruses may attack easily;
2. Hackers may take the opportunity of hacking the computer; so your money deposited to your account may be transferred elsewhere and your important information may be stolen by others;
3. Information saved in the ICT device may be destroyed.

How can you create a unique password? It is a creative work. Your creativity can ensure the security and secrecy of your data and software. If some processes are followed, we can easily do the job.

We should be careful of the following factors while creating a unique password:

- Your name, names of your family members or any personal information should not directly be used though it helps us to remember the password;
- Combination of digits, signs and capital and small letters will strengthen the password. It becomes difficult for others to guess anything about it;
- Password should be long;
- You should not write the password or part of it either in the computer or diary in order or remember it;
- Use a symbol of your own choice to remember the password; It can be your favourite poem, short story, writer, scientific invention, or any historicl event.

If creativity is added to this, the password may be unique. Our password could be as follows:

- MoriTeChaHina_AmiSunDarVhubanE (Rabindranath Tagore)
- AmAr_AchE_wateR (Humayun Ahmed)
- 2BornoT2B_tHatisThe? (To be or not to be, that is the question- From Shakespeare)
- 4Score&7yrsAGO (Four score and seven years ago- From the Gettysburg Address)

Activity

Create a password and present .

Changing password is an important task because a regular change of the password ensures the confidentiality of the information stored on the device and safety and security of the ICT device itself. However, password should be something that can be remembered.

Stay Secured in the Web

The use of information and communication technology in our daily life is gradually increasing. The use of the Internet along with mobile phone and computer is increasing. When a computer or mobile device (phone, pad, tab, etc.) stays connected to the internet, its security is at risk. The risk factors can be reduced by being alert and taking special measures.

An Internet user surfs the website for many reasons. The process of maintaining the security on the web is discussed below:

A. General Site: Many users take the general and cost-free services of yahoo, hotmail, and gmail. The possibility of hacking in every site cannot be ignored. If our account is hacked, important mails will be lost. Again, the act of cheating or work like this can be operated by using the account, but the liability will be on the account holder.

The precautions given below should be followed:

- An easy password should not be used. Many users use their own names and easy orders of the keyboard (such as qwerty or asdfg or 123456789) as the password of their email account. It is very unwise as everyone knows that for email, the account is the user's or account holder's name. That is why anybody can hack your account just giving it a few tries. So a complicated order or combination for a password such as letters, digits, and signs (!@#, etc.) should be used.

- Passwords should be changed on a regular basis;
- Use 2-step verification where possible. For example, the security of your gmail account can be strengthened by your mobile phone. The 2-step verifiaction option of gmail can be used:
  - Point to the account setting from the profile;
  - Get 2-step verification. Click the edit option;
  - Type the number of your mobile phone and click the 'send' button.
  - A security code will be sent from gmail to your mobile phone. Click 'Verify' option typing the verification code;
  - Turn on 2-step verification;

Now, if anybody seeks unauthorized access to your account, he requires the mobile code, but even after knowing the code, he will fail to access the account as the code can be used just once. So, your account will be secured. Similar security measures can be adopted in yahoo! mail in the same way.

- If you send any email from a cyber cafe or a computer constantly used by numerous people, log out of the account after using it.

Besides, if you follow some additional security measures, you will remain safe. In some websites, different kinds of programmes are kept installed. If a cookie is activated on the web browser, the information stored in the computers and browsers of the users of these pieces of software will be sent to other destination. So, it is necessary to be alert while using the website. Some websites seek different personal information from the users. You should not provide them with the information if there is no particular cause.

B. Social Site: Nowadays, many users keep their personal information on social networking site. They share photographs too. So if the password of Facebook account is stolen, the security of the personal information can be at risk. The security measures suggested for the email site should be adopted for these sites too. The following precautions should be taken for using the social networking sites:
   - Have information before developing a friendship with someone. Do not be a friend of anybody who does not deserve it;
   - If you make virtual friendship with people abroad, be absolutely sure

about their identity. Check their profile and friend list to identify common friends and acquaintances;

- Do not share any personal photographs on Facebook;
- Log off each time after using Facebook or email;
- Sign out after browsing the Internet in school or cyber cafe;
- Be cautious about using the laptop or computer of your friend or acquaintance;
- Don't click on any Facebook application sent by a stranger, if you are not absolutely sure of about its reliability;

C. Age Compatible Site: There are some websites only for the adults. These sites are not suitable for you. This kind of website may put the safety and security of your ICT device at risk and hinder the normal operation of your ICT device. In order to protect the device, you must restrain yourself from clicking on any suspicious photos, links, or advertisements on the website. You should give an effort in developing your knowledge and skills in ICT as well as your moral character.

Internet Addiction Disorder (IAD)

The word 'addiction' has negative connotations and it is usually used with reference to drugs. It destroys life because it is tough to come out of the web of drugs. Perhaps you are confused thinking that how an alarming and negative word 'addiction' can be associated with ICT and mentioned in an ICT textbook. Some of you who have computers may have crossed the limit while playing computer games. A few of you did not leave the computer even though you should have for an important task. The users who have the internet access have Facebook accounts too. When you post status on the Facebook, you eagerly wait for a long time to see whether somebody gives a 'Like' to your status. You feel pleasure when the number of your Facebook friends increases. Perhaps you may have spent more time on Facebook than usual. You might have done better in the examination if you had spent less time on this social network. You could have

read some good books or played a bit more outside in the playground or spent more time with your family members.

Perhaps you, who have been damaging your lives by wasting your time on Facebook or by playing computer games more than you should understand the cause of adding a negative word 'addiction' with the positive words 'Computer' and the 'Internet'. 'Addiction' means when someone, in spite of knowing it is a freakish act, cannot resist the temptation of doing it. What is true for drugs is true for the computer and Internet too. As drugs are harmful for life, so are the computer and the internet if they are used beyond the limit.

Addiction to Computer Games

An addiction to computer games begins from the childhood, and it usually happens due to the ignorance of parents. A computer is a tool and different types of work can be done with it. As many positive words are said of this technology, parents think that what is done through a computer is positive. Therefore, when they see their children sitting at the computer for a long time, they do not think of being alert. Computer games are a kind of entertainment, and it has a different dimension. If you play computer games merely as entertainment while staying within the limit, that can be a part of good entertainment. However this does not happen most of the time. People across age, children to adults, may be addicted to computer game. A Korean man died while playing a computer game for 50 hours at a stretch. A Chinese couple sold their child to pay for their computer games. These examples remind us that an addiction to computer games is not unusual. If caution is not taken, one can easily be addicted to computer game.

As addiction to computer games is new, extensive research has not been done on it. In future, it will provide us with absolute direction. Research has identified the presence of a stimulating chemical in a gamer's brain, addicted to computer games. The shape of a brain is altered in those who use a computer 10 hours at a stretch 6 days a week.

Therefore, we should keep in mind that computer games could be a good entertainment, but it is very easy to get addicted to it, and the effect of it is certainly damaging.

Addiction to Social Networking Site

Man is a social being. They continued a social relationship all the time. However, the nature of social communication nowadays is distinctly different from the one in past. It means a different social networking based on the internet. There are some social networking sites such as Facebook, twitter, instagram, google+, etc. through which people can communicate with their circle. Once, these sites were only for the young people, but now people of all ages use it. They use it not for communicating with others, but also for establishing ideologies and legitimising their opinions. If it was within the periphery of objectives, it would not have created any problems, but it is a matter of regret that addiction to social networking sites has becomes a problem for the whole world.

The psychiatrists have started doing research on this matter, and the findings show that the success of the sites depends on how skillfully they can attract the users. The main factor is how often users visit the site and how long they remain on the site. The more the site is visited, the more successful the site is and consequently, the more money the site will earn. Therefore, if the users are not careful, there is every possibility of developing addiction to these sites.

Another interesting factor was identified by the psychiatrists. Individuals have an inherent desire to impress and admire their own self. In psychology, this is defined as 'narcissism'. The social networking sites instigate this inherent human desire. A competitive attitude develops within everyone to make themselves popular. The users upload minute information about themselves, and when people watch and like it, they become happy. The entire system works like a drug, and users waste their time for hours. In fact, a major waste of time world-wide is caused by the immense popularity of social networking sites.

The Way out of Addiction

We have already learned in the previous section that a man can be addicted to computer games and social networking sites just as he can be addicted to drugs. Therefore, both drug and computer game or social networking site addicts display a similar kind of signs and symptoms. It is wise to be careful than to try to get rid of the addiction. There is an apprehension that the users who do not know anything about the addiction may develop a tendency to it. Since you have read about it in the textbook, you may remain more careful about it.

People may become too preoccupied with it, as they do with other sources of entertainment. However, playing computer games does not increase our knowledge on technology. You will just have the enjoyment of playing the computer games, not any technological knowledge. You should be careful about playing computer games, so that it may not affect the important works of your daily life.

We hope that you will not be addicted to computer games. Similiarly you will prevent the people around you from being computer game-addicts. Those who become game-addicts show some particular symptoms. They always think about a particular game, and when they start playing the game, they become excited, and they can not do their daily jobs smoothly. They become inattentive in their studies. When they are forced to keep themselves aloof from playing games, they feel discomfort. The point of worry is that the addiction may come back even after they become free from this bad habit. The people, who somehow have developed addiction to computer games and want to get rid of it, have to acknowledge themselves the fact that they have developed an addiction. They have to make a list of the important events of their life. They should convince themselves about the place of computer game on the list. They have to make a list of the problems of their life too, and they should identify the problems caused by playing computer games. They should divide and allocate their time to cover all the important aspects of life-study, homework, playground, extra-curricular activities, spending time with the family, and voluntary social works. If they get spare time after doing all of these works, they will play computer games. They should gradually keep themselves busy with creative activities rather than computer games.

The users who have been addicted to social networking sites should proceed in the same way to get rid of the addiction. They should try to convince themselves that wasting time on these websites is a kind of addiction. When you have an intention of watching something on social networking sites, you should ask yourself whether you have really any purpose of watching it. If not, you have

to control yourself. You should note down the duration of time you spend every time on the sites. After summing up the time you spend on it in a day, week, and month, you should come to a conclusion about the volume of work you could have done during this time.

You have to reduce the number of unknown friends from your social networking site to reduce your addiction. You have to convince yourself that you can surf the sites after completing the important jobs. You have to develop the habit of deactivating social networking sites when you have exams or other important events. You will gradually reduce the addiction in this way, and finaly get rid of it completely.

You should remember that every moment of your life is valuable, and it is unwise to spend these moments for any addiction.

Piracy

The objective of copyright law is to provide the writers, artists, and others with the exclusive right to their creative work. Usually it is expensive and difficult to reprint any book by violating the copyright law, but now it is easy to make 'copy' or 'facsimile' using computer technology. It is not required to be an expert for doing the job. Therefore additional measures are taken to protect the copyright of computer software, graphics, and animation. When the legal right is violated, they are deprived of their copyright. It is usually called 'Piracy' or 'Software Piracy'.

The concerned entrepreneurs, writers or programmers can preserve the right to their intellectual property within the purview of copyright law. That is why it is illegal either to copy or create something new by editing the software without the consent of the copyright holders. Therefore, the copy or the new creation has no legal protection. Even though it is easy to pirate computer software, the malpractice is not very frequent in the world. The renowned software companies have formed an agency named 'Business Software Alliance' (BSA) to preserve their copyright and to monitor piracy worldwide. The statement given by the agency in 2011 shows that 7 out of 10 computer users are free from piracy. As software piracy is an easy task, it is difficult to get the right statistics. Software piracy is strictly prohibited in Bangladesh.

The Urgency of Copyright Law

The copyright law ensures the right or ownership of the creators to his works for a certain time. If the creation has any commercial value, the creator should get it. As poets, litterateur, movie producers, software writers, web designers all require money and web designers earn their living from creative work, they invest labour, intellect, and money in it. They invest money for their labour and merit of creative works. Therefore, they should have the right to get their money back either by selling or exchanging the products. The legal right within the purview of copyright law has given them the advantages. Artists or programmers get disappointed if they fail to gain any financial benefits for their creative or intellectual properties. The implementation of copyright law will save the creative workers from being deprived.

Right to Information and Security

The law of 'Right to Information' is enacted and implemented in different countries of the world to ensure the free flow of information and people's right to have information. the 'Freedom of thought, conscience, speech' right to obtain information has been assented as the fundamental right of the citizens in the constitution of the People's Republic of Bangladesh. As all powers in the Republic belong to the people, a law called 'Right to Information Act-2009' has been enacted to ensure the right of having information. Every citizen has the right to get information from any authority whenever it is sought under the act, and the concerned authority is compelled to provide the information if asked. If people's right to information is ensured through this act, the transperancy and accountability of the government, autonomous, statutory organizations, and NGOs funded by the government and foreign organisations will be increased, corruption will be reduced, and good governance will be established. The right to information has been ensured under the Act and directives have been given to the organisations to preserve information.

The Act has ensured access to important information of the state. The accessibility of government-held information is an important part of government transparency and accountability to its citizens and good governance. However, seeking and receiving information that may jeopardise the security of the state is not permissible in the Act. For example, the Act does not allow access to questions before the public examinations because the

exam processes will become controversial. The secrecy of question papers is secured through 'Right to Information Act'. If technical, technological, or scientific information is leaked out, the organisations stand to lose financially. In this context, keeping the information secret is not the violation of the rule. The most important factor is that any information that may pose a threat to the security, unity and sovereignty of the state is not obligatory to reveal under this Act.

Under section 7 of the Act, the authority is not obliged to provide certain information, such as:

(i) Any information that poses threat to the security, integrity, and sovereignty of Bangladesh, if disclosed;

(ii) Any information in relation to the foreign policy, disclosure of which may jeopardise the relationship with foreign countries, international organisations, local bodies, and organisations;

(iii) Any confidential information received from the foreign governments;

(iv) Any confidential sensitive business information, the disclosure of which may violate the intellectual property right of the third-party and any information in relation to Copy Right and Intellectual Property Right;

a. any advance information of tax, revenues, VAT, excise duty, budget, or tax rate changes;

b. any advance information on changes in currency exchange rate or tax rate;

c. any advance information in relation to administration and management of banks and other commercial organisations;

(v) Any information, the disclosure of which may hinder implementation of law or increase the rate of crime;

(vi) Any information, the disclosure of which may hamper the safety and security of population and may impede a due judicial process;

(vii) Any information, the disclosure of which may disturb the privacy of individual personal life;

(viii) Any information, the disclosure of which may endanger an individual life and physical safety;

(ix) Any classified information given to law enforcement agencies;

However, it has been laid down in section – 8 (9) of the act, that, any information should not be refused by the authority only for the reason that, it is related with the information the disclosure of which is not compulsory. Rather the information should be separated reasonably and delivered to the applicant.

General Troubleshooting

It is unusual that electronic devices have not gone out of order or not created troubles during using. Some problems are very usual, and some are unusual and complicated. Usual problems can be fixed by the users, but they have to take the help of experienced people for complicated problems. Computers or ICT devices are not exceptions. Those who use electronic devices have noticed that an operating manual is given with every device. The manual contains a section on the last two or three pages, entitled, 'trouble shooting'.

Troubleshooting is the process of finding out the source of troubles. Usually some questions are given with solutions. The users, according to the nature of problems, solve them following the solutions.

In fact, trouble-shooting is a systematic process of identifying the source of problem in the ICT devices in order to solve it. In the manual, usually some possible problems and solutions in relation to the ICT device are mentioned. The users, following the basic trouble-shooting steps given in the manual, can usually resolve the problem in most of the cases. Usually the word 'Troubleshooting' is used for hardware related problems. Some troubleshootings are discussed below:

Sl nos.	Problems	General Solutions
1.	Computer is not starting up.	1. Check the main power cable whether the connection is loose or not. 2. Check whether there is power on the main power-board. 3. If there is no power on the main power-board, change the main power supply unit. 4. Take the device to the local service centre and consult an expert.
2.	Nothing is viewed on the monitor though the system is running.	1. Turn off the system and unplug the power cable from tha main system. 2. Remove the RAM from the slots. 3. Clean up the connectors of the RAM rubbing them with an eraser. 4. Clean up the slot of the RAM with a hard brush. 5. Turn on the computer without installing the RAM, and notice whether you get any beep sound. 6. If you get any beep sound, turn off the computer, and again turn on after installing the RAM. 7. If you get any beep sound, you have to understand that the RAM is faulty. 8. Install a new RAM if there is no display yet. 9. Install the RAM, and check again. Faulty RAM is the reason for at least half of the display problems.
3.	The system becomes very heated, and abruptly shuts down.	1. Open the Casing. 2. Remove the CPU or processor fan from the motherboard, but don't remove the processor. 3. Perhaps the heat sink is filled with dust that creates obstruction on the free flow of air. As a result, CPU can not be cooled. 4. Clean up the heat sink and fan, and install again. Now, after closing the cabinet, turn on the computer again. 5. If the problem is not solved, take the computer to a service centre, and talk to an experienced mechanic.

Sl nos.	Problems	General Solutions
4.	The computer shuts shown on its own at every few minutes, but it is not heated.	1. Check the mother board carefully and find out if there is any leaking or faulty capacitor has got loosened. Tighten the capacitor and the problem will be resolved. 2. Notice very carefully as the computer is running whether any IC or any other component producing extra heat. Be cautious. Let not the board be shorted. If it happens, go to the nearest service centre.
5.	The device freezes while running the Windows.	1. Check whether there is any virus in the hard disk by running an upgraded anti-virus. 2. Taking the back up of important data from the disk, format 'C' drive, and reinstall Windows. It should be done by an expert.
6.	Display freezes when the power button is turned on.	1. **1st Step:** Turning off the power button and opening the caching, carefully remove the data-cables and power-cables connected to hard disk, CD-ROM, and DVD, and after reconnecting the cables, restart the computer. 2. **2nd Step:** Check RAM, processor, power supply connection separately whether they are faulty or loosely connected. 3. **3rd Step:** Check the motherboard using the processor, RAM Hard disk and other related equipments from an active computer. If it is not active, change the motherboard. Get the job done by an expert hand or taking the computer to a service centre. **Note:** Sometimes this problem persists when the keyboard and the mouseport of the motherboard are loosely connected. Set the connection properly.

Sl nos.	Problems	General Solutions
7.	The computer repeatedly freezes, and reboots automatically.	1. If the cooling fan set over the CPU does not move or cool the system properly, this promlem occurs. In that case, switch off the power, and opening the cooling fan, check it out. If the fan is faulty, replace it. Besides, check the fan behind the CPU while the computer is running. 2. The problem persists if the computer has any virus. Clean up every drive of the hard disk by running an updated anti-virus. Besides, it happens due to the installation of new hardware or programme. In that case, uninstall the programme and run the computer.
8.	Getting an electric shock when you touch the metal part of the computer.	1. If you get electric shock by touching the metal part of the computer, it is certain that the computer has not earthed. Calling a skilled electrician, get the computer properly earthed.
9.	The date of the computer is not correctly displayed all the time or if any option of the BIOS is changed, it is not properly saved.	1. If the CMOS (Complementary metal-oxide semiconductor) battery of the motherboard loses power, this problem occurs. In that case, set a new CMOS battery on the motherboard.
10.	Showing the message 'Boot Disk failure' or 'Hard disk not found'.	1. Switching off the power, open the caching, and check the data cable connected to motherboard and hard disk drive, and check the connecting point of the power cable from power supply unit to hard disk and properly connect it. 2. Set the jumper properly following the jumper setting diagram on the back of the hard disk. 3. Entering the BIOS, check whether the hard disk is detected from the options of the BIOS either manually or automatically. If the problem is not resolved, connect your hard disk to a sound computer and check whether it works or not. If the problem persists, buy a new hard disk and install the programmes you require. Get the job done by an expert.

Sl nos.	Problems	General Solutions
11.	Showing messages like 'Out of memory' or 'Not enough Memory'.	1. Usually these messages are shown when you install excess programmes, and work keeping a lot of programmes open. 2. If the computer does not have sufficient memory for installing excess programmes, this problem occurs. Additinal RAM can be installed in the motherboard to resolve the problems.
12.	The keyboard is not working.	1. Shut down the computer, and check whether the keyboard is properly connected to the port. 2. If it is not properly connected or the connection is found loose, refix it and turn on the computer again. 3. Clean up the virus by running an anti-virus software. 4. If the problem is not fixed yet, install a new keyboard.
13.	The mouse is not detecting anything.	1. Check the connecting-cable of the mouse to the computer. 2. Change the port to see whether it works. 3. Connecting a new mouse to the port, check it again. 4. Entering the BIOS check whether the mouse is disabled. If so, enable it, and come out of the BIOS. 5. If the problem persists, connect a new mouse to the computer. The problem will be resolved.
14.	No power is viewed on the monitor.	1. Be sure whether the power button is turned on. 2. Check the AC power cord connected properly to the power outlet behind the monitor.

Sl nos.	Problems	General Solutions
15.	The power of the monitor is viewed on, but there is no display on the monitor.	1. Check the video cable whether it is properly connected to the computer or not. If the other point of the video cable is not permanently connected to the monitor, fix it firm. 2. Adjust the Brightness and Contrast.
16.	The printer is not giving any printing output.	1. Check the power cable connected to the printer. 2. Check whether the button of the printer is turned on. 3. Check if the data cable of the printer connected properly to the computer. 4. Opening the cover of the printer, find out whether any paper is jammed inside the machine. 5. Check whether the cartridge contains any ink. Remove the cartridge, and fix again after shaking it well. 6. If red or yellow blinking light is shown, press the reset button of the printer. 7. If the problem is not resolved, install the driver sofware supplied with the printer. 8. Consult an experienced hardware expert.

Group Activity

Discuss what other problems a computer may have besides the ones listed above. Identify some solutions to these problems.

Exercise

1. What happens when the number of temporary files increases?
   A. Computer runs slow. B. Computer runs fast.
   C. Antivirus does not work. D. Internet access is denied.
2. Which programme runs fast while installing a piece of Software from CD, DVD or pendrive?
   A. Set up B. Autorun
   C. Read me D. Restart

3. Which one is the resource of the modern world?

A. Information B. Data

C. Computer D. The Internet

4. Installation of software requires attention on whether —

i. it supports the hardware or not.

ii. the antivirus software is closed or not.

iii. it has the permission of the administrator or not.

Which one is correct?

A. i & ii B. i & iii

C. ii & iii D. i, ii & iii

Read the section below, and answer the question numbers 5 & 6:

Mr. Ekram has been noticing for a few days that his computer restarts after being shut down at irregular intervals. He remembers that it started happening after he copied a song from the pendrive of his friend a few days ago.

5. The error responsible for the computer might be?

A. Operating System Software B. Virus Software

C. Utility Software D. Antivirus Software

6. For this reason, the computer of Mr. Ekram —

i. may show an unexpected message.

ii. may show a sudden increase in the file size.

iii. may show that it has insufficient memory.

Which one is correct?

A. i & ii B. i & iii

C. ii & iii D. i, ii & iii

7. One of your friends play computer games frequently. What negative impact may this have on him? Discuss.

8. 'It is very important to know about the troubleshooting of computer'? Explain the statement with a supporting argument.

Third Chapter

The Internet in My Education

After completing this chapter, we will be able to:

- Explain the concept of digital content;
- Explain the significance of the Internet in education;
- Identify the fields of using the Internet in an academic curriculum;
- Explain the importance of ICT in career development; and
- Make a presentation on a topic you have studied with the help of Internet.

Digital Content

If any content is preserved, expressed or exchanged as digital data, that is digital content. However, it can be preserved either in a digital or in an analogue system. Digital contents can be exchanged either as files of the computer or of the digital system. Written information, images, sounds or videos anything could be digital contents.

Types of Digital Content

Any information, image, sound or everything expressed through a digital media is digital content though it can be divided into four major categories:

- Text or written content;
- Image;
- Sound or audio and
- Video and animation.

Text or written content: The written content is still voluminous in digital media. It includes all kinds of written information, such as essays, blogposts, list of commodities and citizen's charter, prices of commodities, e-paper, reports, etc.

Image: All kinds of pictures, photographs, sketches, and computer images such as illustrations, cartoons, info-graphics, or animated pictures are the contents of this sort.

Sound or audio: All the contents of sound or audio are included in this content. Any kind of audio file along with the broadcast on the Internet and webinar are audio content.

Video and animation: Any kind of video and animation is its content. The volume of video content is increasing day by day, as nowadays mobile phones also have the ability to record video. Similarly, the volume of video content in the Internet is gradually increasing for the video sharing site like youtube. Besides, direct airplay of some events is very frequent on the Internet. It is called 'Video Streaming' which is also regarded as a video content.

E-book

E-book or electronic book is the electronic format of the printed book. As it is published through an electronic medium, sound, animation, etc. can easily be added to it. These books can only be read either by using computer or e-book reader. Kindle of Amazon.com is the most popular of all e-book readers.

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7. E-books can be printed out according to individual demand, and hence, they are financially more viable.

Nowadays, different kinds of e-books can be found. Different publication requires different e-book format. Usually e-books are divided into the following five categories:

- Exact copy of a printed version: These books are like their printed versions. They are published in the pdf (portable document format) format. The complete texts or parts are available on the internet.
- E-books that are only readable on the internet: These books are usually published in the HTML. This is called the website of books.
- E-books like printed version with some additional facilities: In these books, the readers have the facilities to comment and to know word meaning. Most of the books are published in (EPUB) format. These books are possible to read by using a special device, for example, ibooks compatible fields and ibook reader, but the field and ibook reader have their own format.
- Smart e-book: Audio, video, animation, etc. are included in these books along with the written part. These books are called smart-e-books. Its content is enriched with interactive multimedia features. For example, there are quizzes, spaces to answer the quizzes, and options to check the answers. 3D images are added to these e-books. However, some e-books are formatted in such a way that they can be accessed with a specific electronic device and hardware. For example, ibooks created by Apple computers can only be read with an ipad or mac computer.
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2019

The Internet in Education

We discussed 'e-learning' in a previous chapter where we showed how education and training can be imparted by using radio, television, CD-ROM, personal network, and the Internet. In this chapter, we will have discussions especially on the role of Internet in education.

You are very much familiar with the word 'Internet'. Many people are using it. This technology has brought about a significant change to the world, and some infrastructural facilities and financial solvency are required to use it. Either a desktop or a laptop computer is necessary to use the Internet. It is expensive and cannot be afforded by the majority of the population. Nowadays mobile phone technology has been upgraded and the 'Smartphone', which can provide the internet facilities, is within the reach of most people. However, the smart phone is not always an effective tool for educational purposes. The screen of the mobile phone is so small that its use is confined within the limit of viewing and exchanging information. A recent invention, the tablet-an electronic device typically smaller than a laptop, but larger than a smartphone, can be used in education easily. Many companies are designing applications suitable for tablet to use in education.

We can not avail the internet facilities just by having a desktop, laptop, tablet or smartphone suitable for internet-use. An internet connection is required for that, but it is not equally available in all the places of the country. The speed is not the same. Sometimes a slow-speed internet makes its use meaningless. On top of it, fast and high speed internet service cannot be afforded by the general people of our country. Therfore, the students should get the internet connection at low cost to use it in education.

Our students' access to a laptop or tablet and high speed internet will not ensure the use of ICT for their education. The main question is what they will use in the internet. Is there any content suitable for them? In fact, there is not much content available on the Internet in the Bangla language. Initiatives have been taken by the Government, organisations, and individuals for developing content in Bangla. We expect to get it very soon in the internet.

Many educational contents are now available on the internet. If a student cannot understand anything while studying, he/she is sure to get any solution by giving a search on the internet. If any student wants to learn anything, he/she will find it on the internet. The technologists of our country have successfully made effective search engines.

There are useful websites for mathematics on the Internet in which the answers of any mathematical problem can be found. There are websites for practical of scientific experimentations. Expert groups are formed by enthusiastic people, and when problems are placed before them, they solve it. There are also some useful sites available on the Internet for teaching Bangla.

A vast world of knowledge on the Internet is still unexplored. When we start exploring it, we will discover a completely new world.

The Internet and My Academic Subjects

Perhaps you hear that a teacher is like the flame of a light, and in darkness, they kindle the light of knowledge that illuminates everything and the students see the ways in the light. In other words, the best teachers in the world cannot teach anything, but they can only help the learners to learn everything themselves.

Similarly, access to good content on the Internet will not always ensure great learning experiences and sound education for students. The Internet only provides them with the opportunity to open a new world of knowledge. It depends on the students themselves how much they learn from it. You must have come across students who waste time on the Internet, either by playing computer games or by being engaged in social communication sites. By contrast, some students learn computer programming availing themselves of the opportunity.

You have certainly noticed that all of your textbooks are available on the Internet. In the beginning of the year, you get the textbooks, but if any book is either lost or damaged for some reasons, you can download it.

Activity

How can the blind people be benefited by using digital content? Write a report within 1000 words by taking help from the Internet.

You will be pleased to know that some enthusiastic educationalists of our country have started making oral versions of the textbooks in soft copies, so that blind students can be benefitted from these oral versions.

NCTB publishes all the textbooks and sends it to you free of cost. Besides, many supporting books are also written (we are not talking of the guide books that actually do not contribute to learning). Those who write these textbooks upload them on the Internet. Students can download these books directly from the internet without purchasing them from the market. Many writers of the world

have arranged their books to be available on the internet. If you surf the internet, you will get your favourite books free of cost. However, you should be cautious about downloading any book preserved online, keeping in consideration the Copyright Laws.

We know that our students are not satisfied with what they get in the textbooks. Therefore, they open science, mathematics or literary clubs. Once, students could participate in the activities of the clubs physically, but now they have access to the clubs virtually open on the Internet. Now students of the whole world can participate in the activities of the clubs and increase their academic competence.

My Career and ICT

In future, it will be impossible to think of a day without ICT. Because of the multifarious use of ICT, it will become an important factor in appointing employees or establishing new business firms.

You should develop expertise in ICT for your own career. It will be simply impossible to get any job without having the preliminary skills in office software, internet, e-mail, social networking system, etc. The demand of programming, designing websites, and expertise in specialized job like the security of computer, etc. will increased. Therefore, the prospect of ICT as a career is undoubtedly bright. You should give effort in enhancing the skills in ICT henceforth. ICT is a great field for developing career in the world. Computer is the main requisite of ICT. The potentiality of ICT in providing new avenues for numerous computer-related jobs is beyond imagination. Computer science, computer engineering, office automation system design, artificial intelligence, robotic engineering, mobile communication, data communication- these are only a few of the thousand possible sectors that lead to a successful career in ICT.

The wide scope of programming is extending in Bangladesh like in other countries. The demand of programming is high right now. Everything is being computerized. Programmes are made by software. Different applications of the smartphone are created by programming. The technology advances so quickly that one day the television, refrigerator, air-condition, etc. of home would be controlled from the office. The mobile devices can detect the symptoms of diseases. The size of electronic devices is getting smaller, but their efficiency and performance are increasing. It will continue to do so. The control of everything from kitchen to satellites will be within the reach of human beings. All will be controlled through computer programming.

The efficient programmers of our country are now working for the world famous companies like Google, Microsoft, Intel, Facebook, etc. on freelancing sites. Besides, skilled programmers can open software farms if they want.

Programming as a profession has a special importance. There are wide scopes to prove one's efficiency through participating in different online programming contests. Thus these contests have created opportunities for university graduates from Bangladesh to work in the universities of Bangladesh, opportunities have been availed such as Microsoft, Google, and Facebook. Every year, many of our students, by using their talents, obtain strong positions in these renowned companies. In most of the cases, they do not need to apply for the job. These companies find skilled programmers from different countries.

There are other job facilities especially available in the ICT sector. It provides the scope of doing office from home. The renowned companies in developed countries, because of unavailability of skilled workers in their own countries, offer job opportunities to the skilled workers in developing countries. The workers of our country are of global standard. Now the programmers and other ICT professionals of our country are working through the Internet for the renowned companies of America, Canada, Britain, etc.

Patience is required for working freelance, and proficiency in the English language is necessary for communication. Besides, ICT provides opportunities for working in computer network. The companies using servers of their own need experts for developing computer network and maintenance. That is why it has a very good prospect in job market. The demand of ICT increases day by day in this age of information and communication technology. It is forecasted that the demand will be doubled in the next 2-3 years.

Some software companies have already been established in Bangladesh. They are exporting their software and mobile apps to other countries of the world. It is an honour for us. The younger generation is entering the profession. This sector needs more skilled workers in future. Therefore, the prospect of ICT as a career is undoubtedly bright. You should try to enhance your skill in ICT considering all these factors.

Exercise

1. Which one is essential to excess a website?
   A. Desktop PC B. Tablet PC
   C. Smartphone D. The Internet Connection
2. Which one is the constituent part of Information and Communication Technology?
   A. Computer B. Television
   C. The Internet D. Smartphone
3. Digital contents are –
   i. e-books, Blogposts and e-articles
   ii. info graphics and Animated Film
   iii. audio and Video Streaming

Which one is correct?

A. i & ii B. i & iii
C. ii & iii D. i, ii & iii

Read the section below, and answer the questions 4 & 5:

The father of Rini and Rony purchased a Tablet PC for them. Rini and Rony read in class IX and X respectively.

4. The best use of the Tablet PC for Rimi and Rony will be for -
   A. Playing games B. Listening to music
   C. Calculation D. Study
5. For the highest use of the Tablet PC, Rimi and Rony will need-
   i. a faster internet connection
   ii. cheaper internet service
   iii. better skills in the English language.

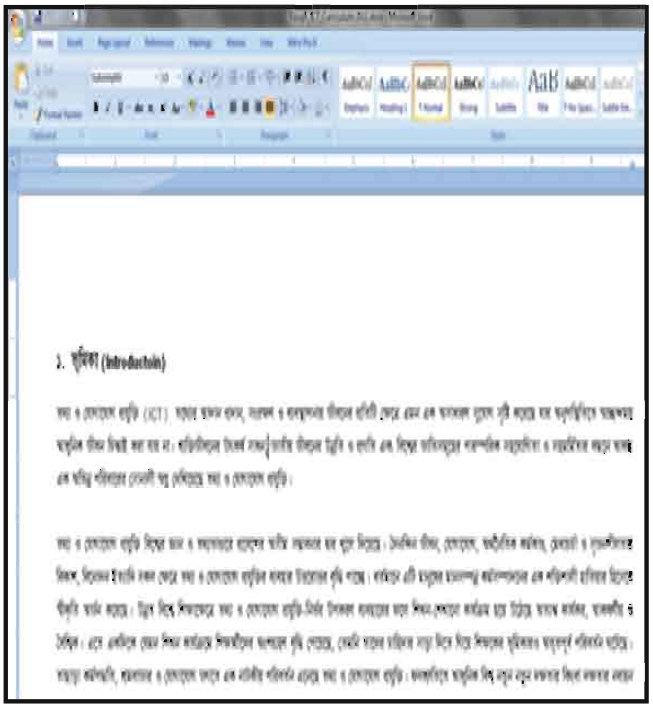
Which one is correct?

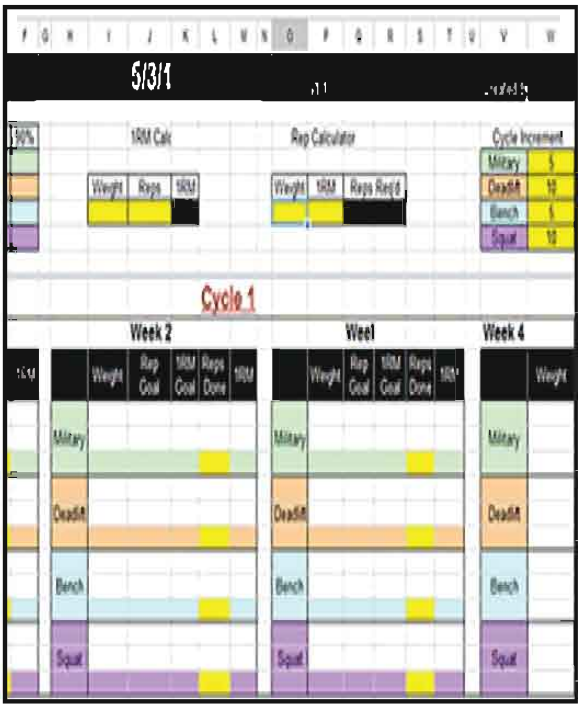
A. i & ii B. i & iii
C. ii & iii D. i, ii & iii

6. How can ICT be helpful for building up our career? Explain.
7. 'Now it is impossible to study without the help of the Internet,' explain with a supporting argument.

Fourth Chapter

My Writings and Accounts





After completing this chapter, we will be able to:

- Explain the important aspects of a word processor;
- Describe the technique of using a word processor;
- Explain the important aspects of a spreadsheet;
- Idnetify the fields of using a spreadsheet;
- Describe the technique of using a spreadsheet;
- Edit by using a word processor; and
- Keep the details of account by using a spreadsheet;

My Writing on Word Processor

Writing is a medium of expression. We have to write for different needs. It might be a piece of literature like poem, short story, novel, diary, etc. In our daily life, we have to maintain different kinds of accounts, both big and small, like expenditures of daily necessities, house rent and result sheet of examination, etc. Once, writing and keeping these accounts were very difficult, but now we have a lot of softwares for doing these works due to the development of information and communication technology. These softwares are called office softwares. These softwares can be used in our desktop, laptop and smartphone. We have word processors for writing and spreadsheet analysis software. You have got a preliminary idea about these in the previous class. Now you will get advanced ideas regarding these topics.

Writing of anything means bringing the imaginary world to reality in words. We know that human beings started the art of writing to communicate their thoughts and their ideas and convey their imagination to others. Now ICT is being used in this work, and the importance of word processing is immense in this regard. Something written is required for receiving and presenting information on television, mobile phone or computer. Now all types of writing are done by the help of the word processor. The word processor provides lots of facilities in terms of writing.

- Any correction in writing can be done immediately. Because of the varieties of editing options, any piece of writing can be presented aesthetically.
- A piece of writing can be presented in different ways, for example, by enlarging or shortening the font-size, colouring, making boxes, etc.
- There are facilities of inserting new paragraphs, deleting parts or rearranging the whole writing without composing the piece of writing from the beginning.
- A document can be more attractive by inserting photographs, graphs, tables, charts, etc.
- A document can be saved and used again at any time. The same work needs not be done repeatedly.
- Any part of a document can be copied to another one, if necessary.

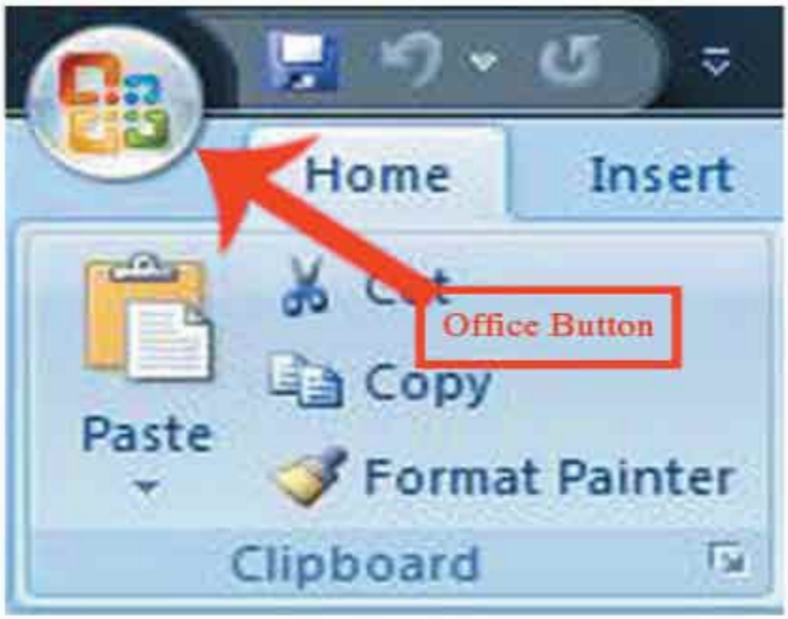
- It is possible on work with several documents simultaneously.
- By using find-replace command, a word in a big document can be found and replaced quickly.
- When a document is needed for a repeated use, it can be saved as template to avoid the wastage of time. For example, if it is required to prepare a lab-report every week, it can be saved as a template.
- In a large document, such as, a research paper, tables, references, images, bibliography, etc. can be inserted and edited within a very short time.
- Spelling errors can be corrected easily by the spell-checker. Automatic correction of spelling is also possible in the word processor with its built-in programmes.
- It is possible to print a document as many times as required by saving it.
- A document can be sent to any destination through the medium of electronic communication.
- Files prepared in the word processor can be preserved easily.
- File management, an indispensable part of the modern office management, has become easier for the word processor.

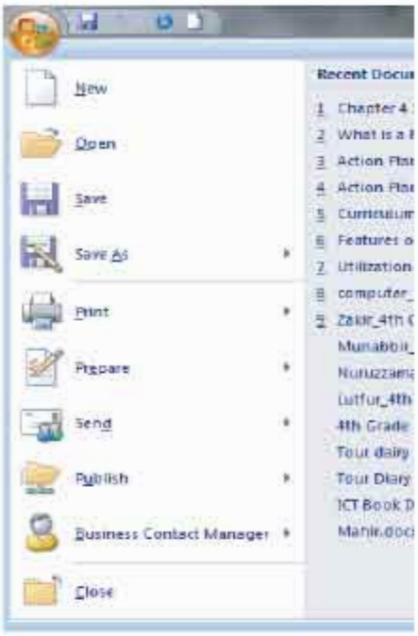
Besides, the word processing software provides more facilities. The number of users are gradually increasing day by day due to its usefulness.

In the previous class, you learnt the process of creating and opening a new document in the word processor. Now we will learn some new techniques for which you need to use your knowledge and skills you have developed earlier.

Office Buttons and Its Options

A new window will open after running word 2007. This icon at the left corner above this window is the office button. The options you will find by clicking the button are shown in the following image:





The following options are most important:

New: This button is to be clicked for opening a new document.

Open: It is to be clicked to open a document saved previously.

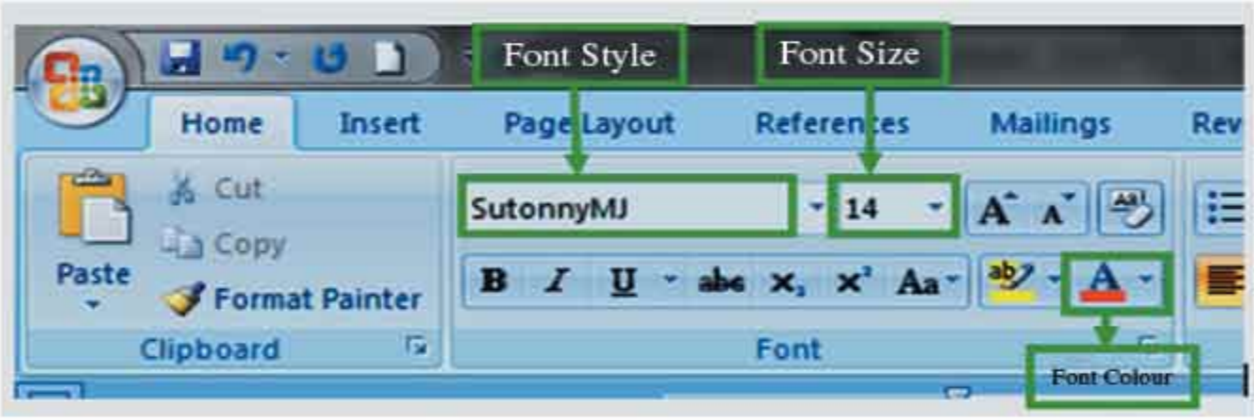
Save: To save a document, this button is to be clicked.

Save as: This button is to be clicked to save a document in several different names keeping the original one.

Close: This button is to be clicked to close an opened document.

Formatting Text: Selecting Font Style and Colour

You have already learnt how to write using a word processor. What will be the impression if an organised piece of writing is presented in a colourful way? Certainly, it will look good. This task is called 'Formatting Text.'



There are letters of different styles in a word processor. These are called 'Font'. In formatting a text, the selection of font comes first. This selection is done from the name of the font of font group from the drop-down box on the home-menu. Pick the font that you like out of numerous fonts. Sometimes, it is required to use fonts of different styles either to highlight or specify words or phrases. In that case, select the requisite section of writing, select the font in the similar way. Click the number from the dropdown box at the right side of the font box to determine the font size. You can select the font colour as you like. Clicking on the icon of the dropdown box of font group, the colour can be selected. There are more facilities of fonts in the font group of home tab.

Activity
Composing a paragraph from your textbook in the word processor, format it by using different font style, size and colour and finally save the document, giving a name.

Formatting Text: Bullets, Numbering and Line Spacing

Our Fruits

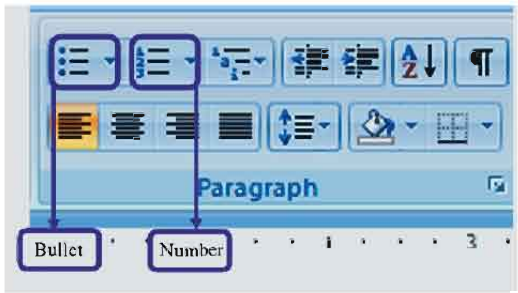
- Mango
- Blackberry
- Litchi
- Jackfruit
- Coconut

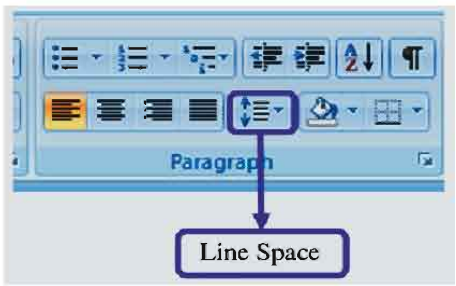
Our Rivers

1. The Padma
2. The Meghna
3. The Jamuna
4. The Surma
5. The Bhairab
6. The Tista

Sometimes we make lists of different things, and use either signs, or letters or numbers to maintain serials. This is called bullets and numbering in the word processor.

There is an icon command for bullets and numbering in the paragraph group of the home tab.





Line Spacing : This tool is used to determine the space between two lines.

Activity

Write down the names of some of your favourite cricket players by using bullets and numbering.

Formatting Text : Table and Different Illustration

The insert tab of ribbon is used to insert a table, image, clip art, different shapes, chart text box, word art, etc. into a document.

Insert Table

Click the (1) Insert tab on the ribbon of word 2007 to add a table. (2) Then click table and click (3) Insert table. You will get a dialogue box where you have to select the number of columns and rows.

Activity

Make a group of 10 students, and arrange the name, father's name, age and roll number of each student in a table.

Insert Picture

By inserting pictures, document can be presented in attractive way. For example, you are watching a lot of pictures along with writings in this text. You have to click the insert tab of the ribbon of word 2007. Then click the picture icon of the illustration group. A dialogue box will come. Select a space for the picture and the picture will be inserted into the document. Besides,

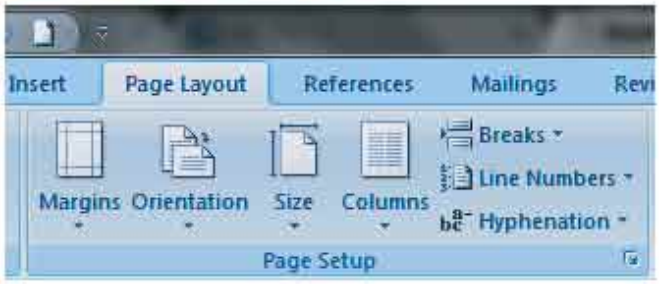
facilities of inserting clipart, shapes, smart art, chart, etc. are provided in the illustration group.

> **Activity**
> Insert a picture in the document prepared by you with the help of your teacher.

Insert Word Art

You can insert fonts of different styles from the insert tab, and to choose your style, you have to click word art of insert tab's text group. A dialogue box will come, and you will get the desired style of your text after selecting the font.

Setting up Margin



It is required to click the page lay out tab of the ribbon to determine the margins of the text. Then clicking the margin icon, desired margin is to be set. Different options of margins will be on the screen when you click on the margin icon. You can select the margin from the options or use your own margin clicking the custom margin.

> **Activity : 1**
> Render the name of your school in different styles of word art.
> **Activity : 2**
> Set the margin after preparing a document.

Line Spacing of Paragraph

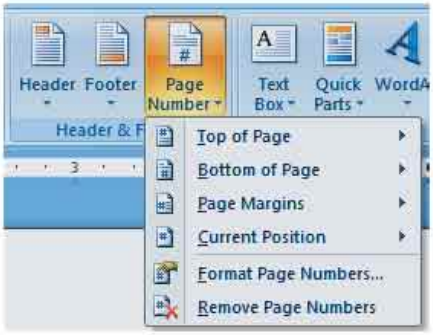
Click the page lay out tab to select the space between lines of a document. It is needed to select the points before and after lines in spacing of the

paragraph group. The command can be given after composing the document. In that case, first, the section of the document in which line spacing will be inserted should be selected. Then it can be determined as per the instructions given above.

> Activity
> Compose a part from either from your Bengali or English textbook and determine the line spacing.

Insert Page Number

Inserting page number on every page is an important task while composing any document. Clicking the page number of the header and footer group in the insert tab on the ribbon, the right option can be chosen. You can insert page number either on the top or at the bottom of the page.



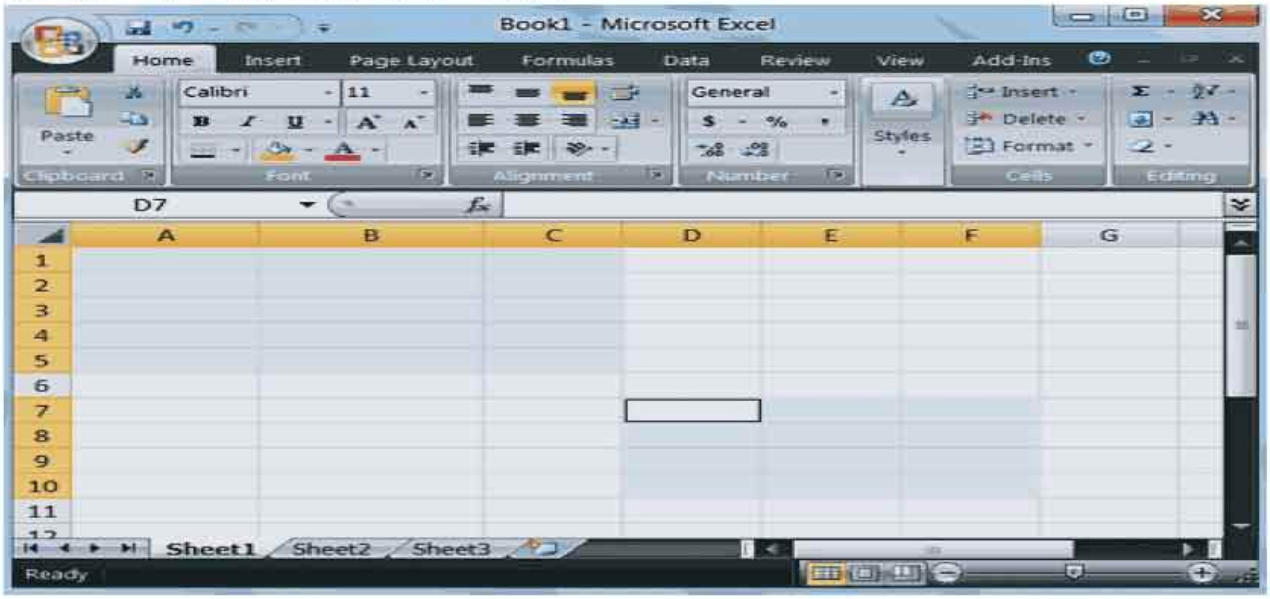
> **Activity**
> Save a document composed by you giving page number.

Spreadsheet and My Accounts

Analysis of Spreadsheet

You are familiar with the use of spreadsheet in class VIII. Can you remember the specialities of this programme? Let us have a look again on what the specialities of spreadsheet analysis are.

Specialities of Spreadsheet Analysis:



- ➞ It is possible to work with statistics and letter-based data;
- ➞ It is advantageous for any kind of accounts;
- ➞ Classification is easier for the rows and columns;
- ➞ It is possible to work with voluminous data by using formulae;
- ➞ Analysis of data can easily be done by using different functions methodically;
- ➞ Data can be presented with graphs, charts, etc.

Different Uses of Spreadsheet

A spreadsheet is an interactive computer application software used for organisation, analysis and storage of data in tabular forms.

Different uses of spreadsheet are given below:

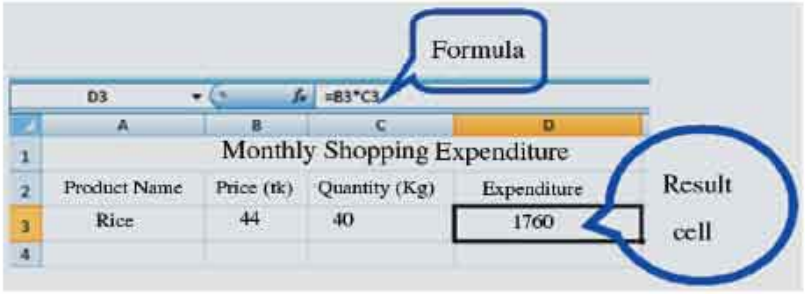
1. analysing exam results in the education sector;
2. maintaining income and expenditure accounts;
3. preparing budgets;
4. maintaining records of employee salaries;
5. making reservations for services, such as airlines;
6. calculating and analysing income tax;
7. counting votes in elections;
8. analysing and evaluating performances of players.

Technique of Using Spreadsheet

You have already got some fundamental concepts of spreadsheet. You will get advanced ideas in this book.

Multiplying

Put the formula in the result cell for multiplying in a spreadsheet. Formula always start with "=" equal to. Multiplying process is of two kinds:



1. Usually press the enter button, after putting the formula into the result cell.

2. Press enter button writing spreadsheet function= PRODUCT in the result cell and giving the cell range.

D3 =PRODUCT(B3:C3)

	A	B	C	D
1	Monthly Shopping Expenditure			
2	Product Name	Price (tk)	Quantity (Kg)	Expenditure
3	Rice	44	40	1760
4				

The facility of multiplying by using function is that the result of multiplication of numerous cells can be done by range, if necessary. The process of multiplying 3 cells is shown in the picture below:

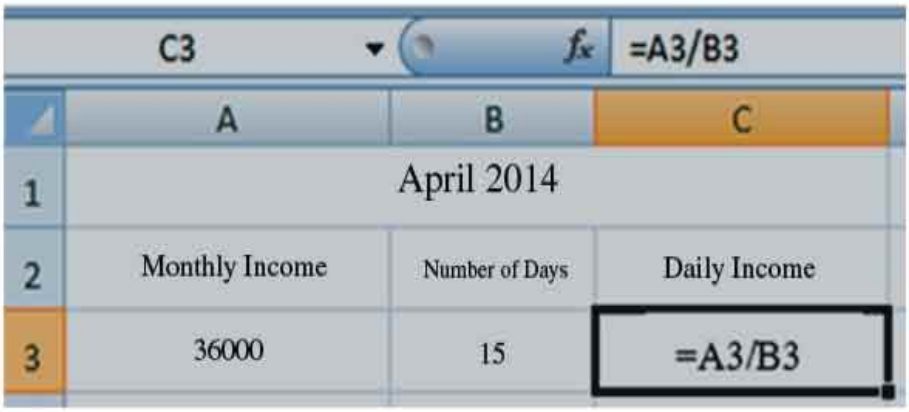
D3 =PRODUCT(A3:C3)

	A	B	C	D
1	Volume of Cube			
2	Length	Width	Height	Volume
3	40	15	14	8400
4				

Activity
Opening a file of spreadsheet, multiply some imaginary data.

Method of Dividing

Dividing can also been done on the spreadsheet by a formula. You have to write '=A1/B1' in the result cell to divide A1 by B1. Here the sign / is used as the sign of division.

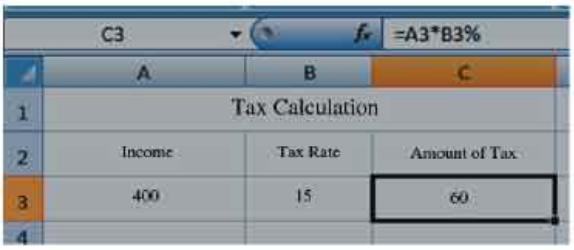


Activity

Try to find out the result by using the formula.

Calculation of Percentage

How much is 15% of Tk. 400? What is the selling price at profit 16% at the purchasing cost Tk. 1200? We frequently need to do this sort of calculations in our practical life. We can do these calculations on the spreadsheet.



To solve the first problem on the spreadsheet, put formula =A3*B3% in the result cell. The process of writing the formula in the result cell by using keyboard is to write the sign = and click the cell where 400 is written. Then press * and click the cell where 15 is written. Then writing % (press shift key and 5), press the enter button. You will get your result.

The formula =A3*B3%+A3 should be used to solve the second problem. The process of writing this formula is similar to the process mentioned above.

Activity

Solve the problems of calculating percentage under the guidance of your teachers.

The monthly basic salary of Mr. Chowdhury is Tk 16500. He draws residential allowance at the rate of 55% and medical allowance Tk 700. He subscribes Tk 90 to the benevolent fund. What is his monthly net salary?

Exercise

1. Why is a document saved as a template?
   A. For Aesthetics B. For frequent use
   C. For rearrangement D. For the facilities of making copies
2. Which one of the following is used for saving the document for the first time?
   A. New B. Open
   C. Save D. Save As
3. By using spreadsheet analysis –
   i. preparing a text is easier.
   ii. a theory can be applied.
   iii. data can be arranged.

Which one is correct?

A. i & ii B. i & iii
C. ii & iii D. i, ii & iii

Read the section below, and answer the question nos. 4 & 5:

Soumitra writes on nature and environment for a newspaper voluntarily. Sometimes he has to attach picture of flowers, birds, or rivers. He is an accountant by profession. He has to keep the account of the employee and place a monthly report.

4. Which software does Soumitra has to use for his voluntary work?
   A. Word Processor B. Spreadsheet
   C. Graphics D. Database
5. In his professional work, Soumitra has to use –
   i. the template.
   ii. theory.
   iii. data arrangement.

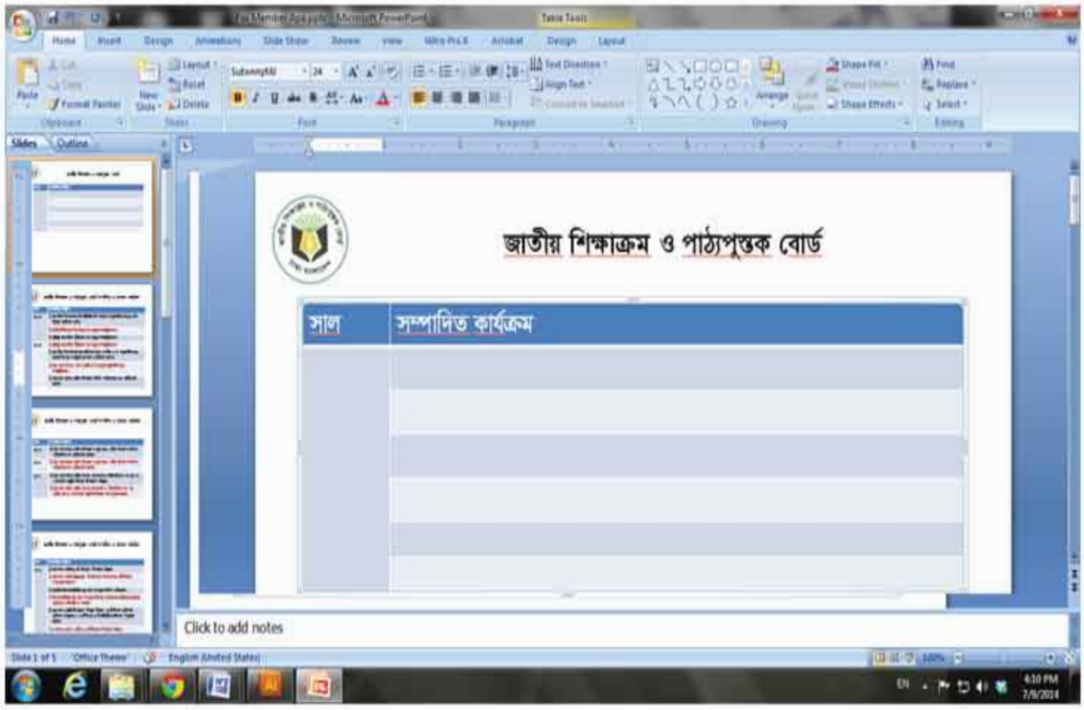
Which one is correct?

A. i & ii B. i & iii
C. ii & iii D. i, ii & iii

6. What kind of formatting is used in word processor for making a list? Describe with examples.
7. Write five advantages of analysing spreadsheet.

Fifth Chapter

Concept of Multimedia



After completing this chapter, we will be able to:

- Explain the concept of multimedia;
- Describe the method of multimedia;
- Identify the fields of using multimedia;
- Explain the idea of presentation software;
- Analyse the significance of presentation software;
- Describe the technique of using presentation software;
- Explain the idea of graphics;
- Describe the technique of using graphics software;
- Make slides on different topics by using presentation software and present it; and
- Draw creative pictures by using graphics software and present it.

Multimedia and Graphics

Human beings have been using different media to express themselves since the ancient time. Writing is an expressive medium, and so are the sound and image. Multimedia is the integration of multiple forms of expressive media, such as texts, graphics, drawings, photographs, videos etc. With the evolution of civilisation and development in technology, these mediums have been used in various ways. Specifically in today's digital era, the nature of these media has also changed.

The media of the analogue age are not the major media of the digital age. Rather the media of analogue age have changed in motive. Once, the media were used separately, but nowadays they are harmoniously combined together. The potentiality of multi-media has been enhanced with the integration of programming ability of digital machines. Hence, it is also called 'interactive multimedia' because of its multiple dimensions and different programming abilities. Interactive multimedia is widely known to people. In summary, multimedia means numerous media. Interactive media means the media with which the users can connect and interact.

Multimedia is the combination of different expressive media. We express ourselves by using, at least, three media which are colour, image and sound. These three media have various forms too. They appear before us either individually or collectively. Different kinds of media are known to us, such as paper publication, radio, television, video, cinema, video games, educative software, webpage, etc. We can call television, video, and cinema multimedia, but video games, educative software, and webpage are called interactive multimedia.

Multimedia is usually captured by a digital machine or device. It can be directly presented on the stage or projected in a different way. Sometimes some electronic devices are called multimedia because they contain the information and directly display it in different forms. If we want to use three media in one activity, we should start from the cinema. In the last phase of 19th century, in 1895, with the invention of cinema, text, graphics, sound and movement were added to it. Therefore, cinema is called the earlier invention of multimedia. Even though this form of multimedia came into being ages ago, the integration of the computer to it is a quite a recent development.

Media of Multimedia

We know that the computer, the most popular digital device, is widely known as

2019

the calculating machine. Processing and transferring data was another important work of the computer. Later on, it was widely used for typing.

In the beginning, only one medium was used to do all these works, i.e. text. However, gradually graphics and sound were used too. Besides, the computer has the ability to do programming. In fact, computers are capable of creating an interactive experience for users with the combination of text, graphics and sound. Now multimedia promised dynamic experiences than that of the previous time. Multimedia is used not only in the computer, but also in mobile phones, smartphones, tablets, and other digital devices.

The main mediums of Multimedia

There is a world-wide preferences for computers and they tend to replace the conventional machines.

1. **Text:** Any work in relation to written text is done on computers world-wide. Once it was done by the typewriter. At present, computers are used for all kinds of writing tasks in offices to professional printing houses.
2. **Graphics:** Computers are used for graphics design, editing, and so on. In our country, the use of computer is very limited in graphics design, painting, drawing, and even in commercial graphics included in Fine Arts. However, computers are widely used in printers and packaging industries. The use of computer started in 1990s in printing, publication and graphics design. It was first used to edit scanned photos by Photoshop. Gradually, computers have been used in design and graphics.
   - 2.1 **Video:** Video is a kind of graphics. It is better to call it a moving graphics. Video is an established medium all over the world. Video has been extensively used in TV, Home Video, Multimedia Software, Web, etc.
   - 2.2 **Animation:** Animation is a kind of graphics. But it can be either moving or static. It can be either 2D or 3D. The use of animation is gradually increasing in our country. In advertisement, animation is a favourite media, but we lack skilled people in this sector. In fact, animation is never used as a single medium. It is combined with audio, video, text, graphics, etc.
3. **Sound or Audio:** The whole world depends on computer for sound or audio recordings, editing, etc. The analogue system has been completely rendered obsolete in sound engineering. Now sound recording can easily be done in computers.

Use of Multimedia in ICT

There is an increased use of multimedia in ICT.

1. **As teaching aid :** The use of multimedia as a teaching aid is widely used. The learner will understand a topic easily, if multimedia is used in the class room. The teacher can easily make the lesson effective and interactive. Beside this, there are various kinds of multimedia software for education.
   1.1. **Multimedia Software :** The multi-media software has just started being made in Bangladesh recently. Multimedia technology has been used in with 'Bangladesh-71', 'Abosor', 'Biswakosh', 'Namaj shiksha', 'Bijoy Shishu shiksha', etc. They are not much interactive. However, we expect that in Bangladesh, multimedia software will be definitely developed extensively in the 21st Century.
   1.2. **Digital Publication :** Our publication is still paper-based, but the 21st century will definitely be the century of digital publication.
2. **Entertainment :** Multimedia is widely used in most of the genres of entertainment. Cinemas and plays are being made livelier by the special effects of multimedia.
3. **Advertisement :** Because of the use of multimedia, advertisements have become attractive. Both real and fictional elements can be shown in advertisements with the help multimedia.
4. **Games :** Multimedia is extensively used in computer games or video games. Because of the use of multimedia, the games seem as real as real life.

The man who works with text, graphics, audio, video, animation, etc. is called the multimedia content developer. Many pieces of software like Adobe Photoshop, 3D Studio Max, Maya, etc. are used for multimedia contents. However, depending on the content that they develop and the interactive applications that they use, multimedia contents developers should be called 'multimedia programmers' or 'multimedia authors'. In fact, there is a difference between developing contents and adding interactivity. Adobe Premier and Adobe Photoshop can make an interesting piece of multimedia content. By contrast, in order to make the multimedia content interactive, 'Director', a programme of creating software, combines the media made in 'Premier' and 'Photoshop' and creates an interactive application.

In this connection, we should know a piece of information about interactivity. Application of any style, such as Microsoft word scroll or flash, into the text or any effects of animation into the video does not make the text or video interactive. Something created by the powerful authoring software like 'Flash', 'Director', and 'Authorware' that makes interaction possible between the user and the computer is called 'Interactivity'.

In future, the demand and the number of multimedia programmes will definitely never lessen. The demand of multimedia content developers and programmers, along with business software developers and maintenance experts, is also increasing.

Presentation Software

Creating Presentation

It is the age of exchanging information and ensuring human welfare through free flow of information. Now, the exchanging of information among the researchers, educationists, social workers, and professionals of national and international levels has been emphasized most. Meetings, seminars, symposiums, and workshops are frequently arranged in order to ensure free access to information. As a result, experts have up-to-date information about their respective fields.

Presentation softwares such as PowerPoint, Picasa, Impress etc. are mainly used to present information in an attractive and effective way in meetings, seminars, symposiums, and workshops. 'PowerPoint' is a piece of popular software or application of Microsoft Office. It is called 'Presentation Software' too.

Information can be presented attractively with texts, graphics, audio and video through Power Point. In fact, right at the moment there is some alternative to Power Point software. That is why it is widely used for presenting information in meetings, seminars, symposiums, and workshops.

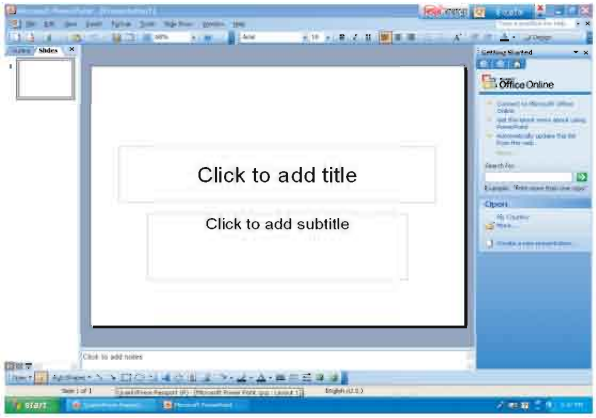
Just a word document in a Microsoft Word Programme, has numerous pages, a Power Point presentation also has several slides. A page containing more than one slides is called 'Handout'. A draft should be made for organized presentation in Power Point. This draft is called 'Slide Layout'.

Opening Power Point Programme and Creating Slides

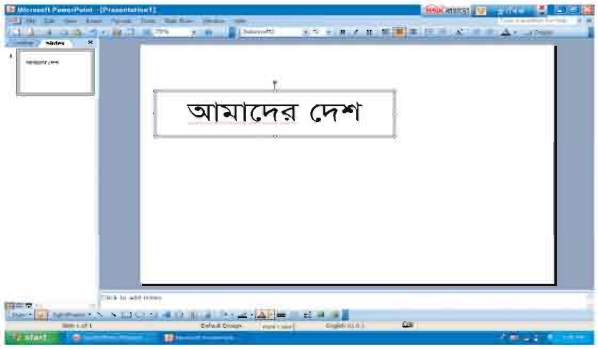
To open Power Point Programme

1. At the left corner below the screen, 'Start' is written. It is the 'Start' button.

2. Click the 'Start' button by taking the mouse pointer on it, and a menu will be viewed on the screen.
3. Place mouse pointer on the 'All Programs' command and get a 'Fly out' menu.
4. Click the 'Microsoft Office' menu from this 'Fly out' menu and get the list of all the programmes of Microsoft Office on another 'Fly out' menu.
5. Select the 'Microsoft Office Power Point' command from this list and the first slide will be shown on the screen. In the main part of the slide.



- 'Click to add title' and 'Click to add subtitle' are written on the box. Click both the writings and a text box will be shown with the insertion pointer. Type a title and subtitle while the insertion pointer is in the box. If you click outside the box without writing anything those two writings will be viewed again.
- Click the textbox border and press delete button after selecting, the textbox with the writing will be deleted.
- Select the textbox icon from the ribbon of the 'Home' menu and take the insertion pointer inside the screen and the insertion pointer will be changed into a text pointer. (create a box, dragging)
- The insertion pointer will be on the box.
- The keyboard will be transformed into 'Bangla' for typing in Bangla.
- Select font, fontsize, colour, etc. from the toolbar and ribbon for typing work.
- 'আমাদের দেশ' is typed selecting Sutonny MJ, font size 150 and blue colour.



- The textbox will remain selected after being typed. There will remain round and hollow selection points, four on the four arms of the selected box and four on the four comers. Dragging these selection points, the size of the box can be made small or big either sideways or from the top to the

bottom to contain texts. The selection will go away if you click outside the box.

- The box can be moved to any place of the screen by clicking any arm of the box and by dragging it.
- On the left side of the slide making window, the small version of the slide is shown in thumbnail view.

Saving Presentation

- Give the Save command from the file menu, and Save as dialogue box will come.
- Type the name of the file in Save as dialogue box. Suppose that the name is 'My Country.'
- Click the button 'Ok' in the dialogue box, and the presentation will be saved as 'My Country'.
- The file can be opened next time to complete the unfinished work.

Adding New Slide

Many slides may be included in a single presentation. To add a new slide

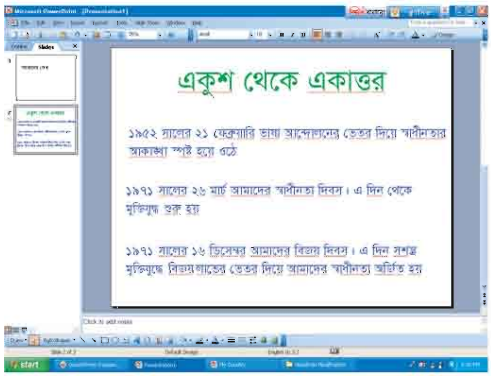
1. Select the command of 'New Slide' on the ribbon of the 'Home' menu or Press Ctrl+M from the keyboard. A new slide will be added.

- 'Click to add title' and 'Click to add text' will be shown on the newly added slide. Both the writings will be deleted following the previous directives. The small version of the newly added slide will be shown on the left side of the Window in thumbnail view.

2. Type the title of the new slide 'একুশ থেকে একাত্তর' in the textbox following the process described earlier.
3. Following the same process, type the three titles in three different boxes:

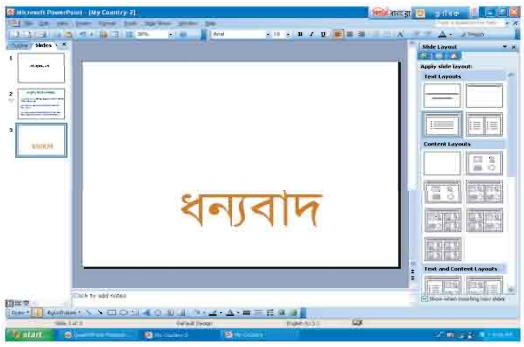
১৯৫২ সালের ২১ ফেব্রুয়ারি ভাষা আন্দোলনের ভেতর দিয়ে স্বাধীনতার আকাঙ্ক্ষা স্পষ্ট হয়ে ওঠে ১৯৭১ সালের ২৬ মার্চ আমাদের স্বাধীনতা দিবস। এ দিন থেকে মুক্তিযুদ্ধ শুরু হয়

১৯৭১ সালের ১৬ ডিসেম্বর আমাদের বিজয় দিবস। এ দিন মুক্তিযুদ্ধে বিজয় লাভের ভেতর দিয়ে আমাদের স্বাধীনতা অর্জিত হয়



- The three boxes will be placed one after another from top to bottom. The title will be on the top. Another slide will be added following the process of adding the second one. That will be the third slide. To add this slide

4. Type 'ধন্যবাদ' as the title of the new slide in the textbox following the process described earlier.



- By adding numerous slides, complete the work of presentation as required.
- After preparing the primary presentation, adding different varieties make the entire presentation attractive.

Display Slides in Presentation

Making two slides for presentation, check it whether it has been workable as well as presentable. For completing the task,

- Press the button F5 from the keyboard or select the Slide Show on the ribbon of the View menu or click the icon of Slide Show on the status bar, the first slide of the presentation will be displayed.
- For viewing the next slide of the presentation, press the right arrow of the keyboard, and to go back, press the left arrow.
- For starting the next slide show from the middle of the presentation, press Shift F5 button.
- Press the Esc button to revert to the window of editing from the window of slide show.

You can be sure whether the slides are presentable or not by checking at any phase of preparing the slides.

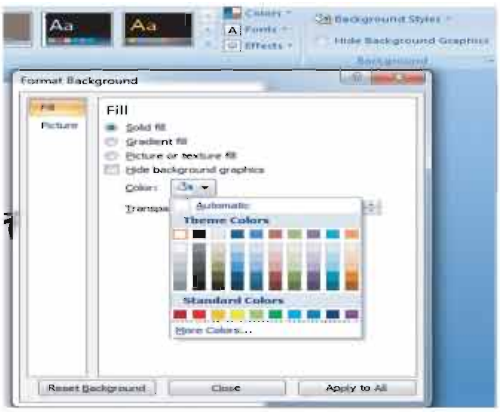
Changing the Background of Slides

The color of background can be changed either during the processing or after the making of the slides. Any image can be used as the background of the slide.

Adding or Changing Background to the Slide

1. Keep the slide open or active to add a background to it. The first slide of the current presentation is kept open.

2. If you click on the drop-down bar of Background Style on the right of the ribbon of the Design menu, a palette of gradient and solid color will come on the screen. If the mouse pointer is placed on a color or gradient of the palette, in the original slide, the background of that color or gradient will appear.



To use more colors, textures and images

1. Select Format Background at the bottom, and a dialogue box of that name will come on the screen.
2. Clicking the Solid Fill Radio button on the left above the Format Background dialogue box, make it active. Click Color Drop-Down Arrow, and a color palette will be viewed on the screen. The color swatch, which will be clicked from this palette, will fill the background of the slide.
3. Clicking radio button of Picture or Texture Fill, make it active, and Texture drop-down will be viewed instead of color. Click this drop-down arrow, and different kinds of texture will be shown. The texture swatch, which will be clicked, should be selected from the original slide.
4. The dialogue box called Insert Picture will come if the File button below Insert Box is clicked as the radio button of Picture or Texture Fill is selected. Select the picture opening the folder of the dialogue box that contains the picture.
5. Click the Insert Box button of the dialogue box, and it will disappear, and the picture will be set as the background of the slide.
6. To remove the imposed background –

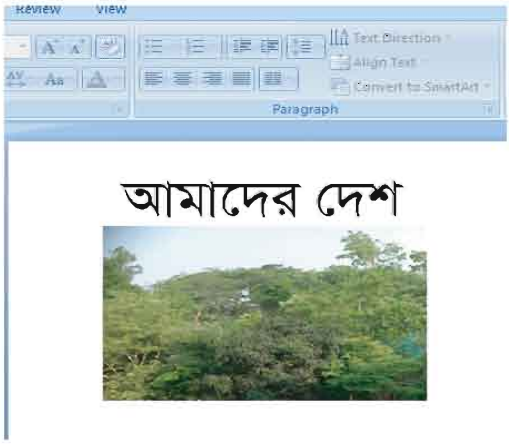
   Click the Solid Fill radio button of the dialogue box of Format Background and make it active. Click the drop-down arrow of Color, the palette will be viewed on the screen. Select White from this color palette.
7. Click the Close button of the dialogue box.

Insert Picture in Slide

Sometimes, it may require to insert a picture on the slide.

To insert a picture into a slide

1. Click the icon of Picture on the ribbon of the Insert menu, and the dialogue box of Insert Picture will come on the screen.
2. Open the folder of the dialogue box of Insert Picture in which names of pictures are available. After selecting the picture you prefer, click the Insert button. The selected picture will be added to the slide.



3. Clicking the resize box and dragging it, the size of the picture can be resized and replaced elsewhere, if required.

Inserting Transition into Slide

Usually slides are presented one after another, and effects are used to shift from one slide to another. This effect is called 'Transition'. It works on the slide into which transition is applied by keeping it open. To insert Transition into a slide

1. Keep the first slide open.
2. Click the Animations menu to activate it.

On the ribbon of Animations menu, a row of Transition samples will be viewed.

On the ribbon of Animations menu, a row of Transition sample will be viewed. The sample on which the mouse pointer is placed will be viewed in the slide. There are three arrows on the right to pick more from the given samples. If you click repeatedly on the middle arrow, a new row will be viewed with every press of the mouse button. If you click the arrow on the top, a column will appear. If you click the arrow at the bottom, all the samples will be viewed. Click the sample chosen, and the transition will be applied to the slide.

3. If you want to apply the same transition to all the slides, click 'Apply to All' button on the right side after applying it to the first slide.

4. If you want to apply a different transition to every slide, you have to apply it separately following the same process for every slide.

Applying Transition Separately in Text

One slide may contain several textboxes. There are texts in three textboxes in the second slide of the current presentation. If different transitions are applied in these three textboxes, they will come to slide in three different processes. To insert transition to the textbox

1. Keep the second slide open.
2. Select the textbox.
3. Click the Animations menu to activate it.

   A command called Custom Animation will be added to the bottom of Animation. Click Custom Animation and a palette will come.
4. Select Entrance from the Add Effect drop-down list of Custom Animation, and a list of custom transition will appear. From this list

- 'Blinds' is selected for the first textbox.
- 'Fly in' is selected for the second textbox.
- 'Diamond' is selected for the third textbox.
- If you select 'More Effects' from this list, another list of transition will be viewed. Selection of any transition from this list will show the same effect.

5. In order to remove a transition from a specific textbox, select it. Click the 'Remove' button to exclude the transition.

Apply Sound to Transition

Keep the slide open to add sound to the transition, and select the name of a sound from the drop-down list of Transition Sound. Camera is selected for the first slide. Click Apply to All button for applying the same sound to all the slides.

If different sound is required to apply in every slide, separate application of sound following the same process for every slide will be needed.

Add Video to the Slide

Video can be added to any slide, if necessary. Usually video is added to the introductory slide. Suppose that video will be added to the introductory slide of the presentation on Our Country. For this

- Keep the introductory slide of the presentation open.
- Clicking the Movie drop-down on the ribbon of the Insert menu, get 'Movie from the file' command. Select the command and 'Insert Movie dialogue box' will come.
- A movie file will be selected from the video folder of the Insert Movie dialogue box.
- Click the Ok button of the dialogue box.
- A message box with a question 'How do you want the movie to start in the slide show?' will appear.
- The Messaging box will contain two buttons 'Automatically' and 'When Clicked.'
- The Messaging box will disappear if required button is pressed, and the video file will be added to the slide. You can place the file anywhere on the slide by dragging it and resize it by dragging the resize box.
- The first slide will appear on the screen if you press F5 on the keyboard.
- The Thumbnail view of the video file will be shown on the screen.
- Click the Thumbnail of the video file and it will start playing. If 'Automatically' was selected at the time of adding the file, it will start playing with the display of the slide.

Activity

Make a power point presentation about your school and present it.

Graphics

Importance of Graphics

Photographs, drawings, paintings, illustrations, designs, etc. have to be scanned and transferred to the computer first for editing. Now pictures captured by a digital camera can directly be copied to the computer. After the editing, these photos can be used on printed invitation cards, posters, banners, advertisements, etc. through the digital media.

There are numerous programmes to edit photos in computer. Of these programmes, Photoshop is popular worldwide. Brightening or darkening the

entire or a part of picture, designing the cover of a book with several pictures, making posters, cutting off any irrelevant part of the picture, erasing blotchy marks on the picture, etc. can easily be done by Photoshop.

Photoshop, an editing software should have been installed in the computer or it should be installed. Editing can be done on a file created earlier.

To open Photoshop program

1. Click the start or Logo button of Windows and place the mouse pointer on the 'All Programs' command, and get the Fly out menu.
2. Click Adobe Photoshop Programs, from this menu and 'Adobe Photoshop' will open.

To prepare new file in Photoshop program

- Click 'New' from the 'File' menu after opening up the Photoshop program, and get 'New' dialogue box.
- You will get 'Untitled-1' selected in the square space of 'Name' of the dialogue box. Pressing the backspace button of the keyboard, erase the writing and type a name. It will be the name of the file. Suppose that 'Practice' is typed in the 'Name' box.

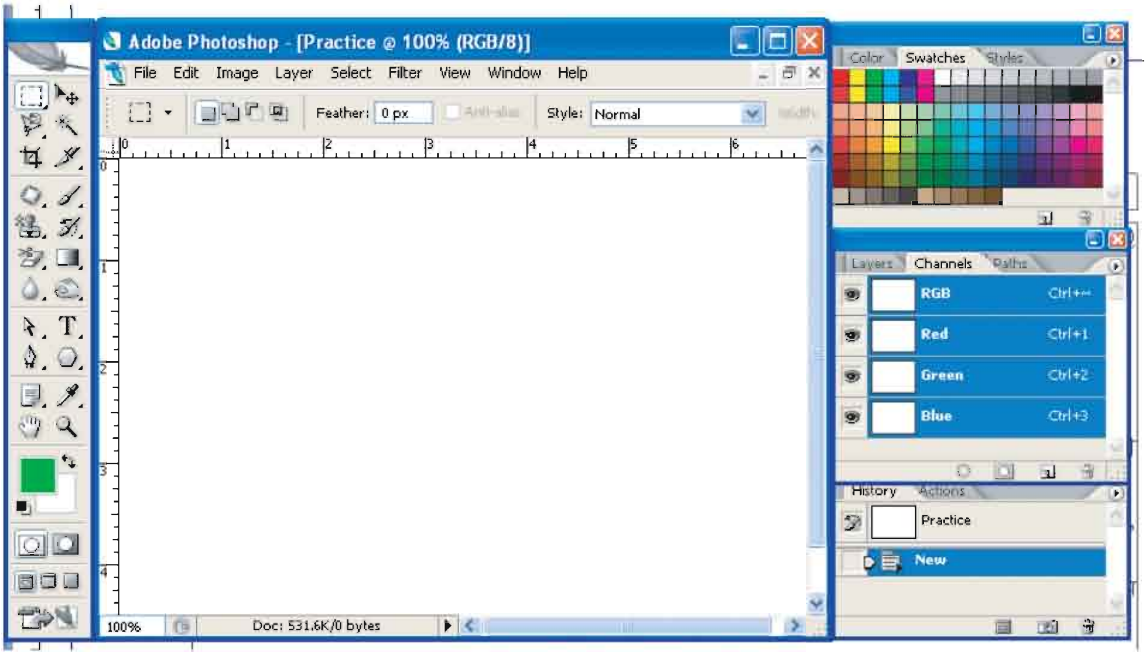
  If you type the name in this stage, you need not to type it further. While closing the file, a new dialogue box will come when you will go to close the file.
- In the box of 'Width' and 'Height' in New Dialogue Box, type numbers on the measuring unit 'inch', for example, width of 7 inches and height of 8 inches. There is a dropdown menu to determine the unit of measurement on the right side of these two boxes such as inches, pixels, piacas, points, cm, mm. Select the requisite unit from this dropdown menu. Fix the measurement by inches. Suppose that the measuring unit of the present task is inch, and 7 in the box of width and 8 in the box of height have been typed.
- The Resolution, for example, 72 Pixel, is kept unchanged.

Images or pictures are created in Photoshop by pixels. Pixel is the smallest square unit of image. 72 pixels per inch mean crossing 72 lines vertically and horizontally in per inch space. The total number of pixels in one square inch will be 72′72= 5184. The number of pixels in per square inch is called

resolution. If 130 is typed in the box of pixel, the resolution will be 130′130=16900. If an image is enlarged, the pixels could be visible. This view is called pixelated. In simple words, it is called split image.

- From the dropdown menu of color mode in the dialogue box, RGB, CMYK, Bitmap, Grayscale, and from Lab Color RGB can be selected as all the images on the monitors of computer, television, and other electronic media are viewed in RGB mode. RGB is the abbreviation of red, green and blue.
- There are three options in the 'Background Contents' of the dialogue box. The options are White, Background and Transparent.
- If 'White' is selected from the dropdown menu, the background will be white. If a colour is selected from Background toolbox, it will turn into the colour of the canvas. If transparent is selected, the background will be transparent and checkered. The background option can be selected as you like. White can be selected here too.
- Without following the steps described above, Default Photoshop Size can be selected from the 'Preset dropdown list. Thus, all the units of Photoshop will be selected as per the requisition.
- Completing the measurement of the dialogue box, press 'OK'.
- A window will be viewed as per the measurement given in the dialogue box. On the left of the screen, Practice @ 100% (RGB/8) will be viewed. This bar is called the title bar. If any name is not used in the Name box of the new dialogue box, Untitled-1@ 100% (RGB/8) will be viewed on the title bar as the file name.
- Double click on the title bar, and it will be viewed on the screen.
- The menu bar is located under the title bar and the option bar is below the menu bar.
- The ruler is located below the option bar.
- The Photoshop work is to be done below the ruler on the screen.

The screen can be compared to the canvas of painting of an artist. On the left side of the canvas, are the brush, color, and different kinds of editing tools, and on the right side is the palette.



The Toolbox of Photoshop and Palette Distinction

At least 69 kinds of tools are there in the Photoshop. Besides, numerous options of palettes, dialogue boxes, etc. are there. There is a relationship among different tools, option palettes, and dialogue boxes.

In addition, the brush colour or foreground and colour control icon are there for the canvas or background and visual space control icon for the monitor, mask icon, etc. If a line is drawn either with the pencil or with the brush tool, the color of foreground works as the color of brush.

- Different palettes are kept on the right side of the screen. The minimise icon is viewed above the right side of the palette. The palette will be minimised if you click the minimise icon. It will be again extended if you click the maximise icon.
- If you double click on the top bar of the palette, it will be either maximised or minimised.
- Clicking and dragging the top bar, the palette can be replaced anywhere.
- There is a toolbox on the left side of the screen. It has included different kinds of tools for different jobs. The tool, which is required to work, becomes activated when clicked. If the mouse pointer is taken inside the screen after selecting a tool of the box, the tool is either viewed on its actual size or as a plus (+) sign, and the editing tools are viewed as circles.

Selection of Tools and Acquaintance of Move Tools

- 3 selection tools and 1 move tool are viewed on the top of the tool box. At the bottom of the right side of some tools, a small arrow sign Z is viewed. It indicates that in the same position, more tools of the similar types remain there. For example, 4 Marquee tools in the same position and 3 Lasso tools in different positions are there.
- Place the mouse pointer on the tool, and the name of the tool will be viewed. Click the tool to activate it. If the mouse pointer is brought inside the screen, it will be viewed either in the own shape of the selected tool or with a plus (+) sign.
- Making squares, circles and objects is possible with the marquee tool within the selected tool.
- By pressing the shift button and dragging Rectangular Marquee Tool, a perfect square, and pressing the shift button and dragging Elliptical Marquee Tool, a perfect circle can be drawn. If you drag while pressing the Alt button, selections of square and circle can be extended from the centre point.

Shifting of Selection

- After making the square of selection by Rectangular Marquee Tool, remove the finger from the mouse, and the selection of square will be viewed on the screen.
- If you take the mouse pointer inside the selection, a rectangular icon will be viewed below the pointer. Pressing and dragging, the selection can be shifted elsewhere.
- Select the 'Deselect' command from the Select menu or click the mouse pointer outside the selection while it is floating. It will go away.

Fill Colour in the Floating Selection

- There are colour icons of 'Foreground' and 'Background' at the bottom of the toolbox. The icon above is for 'Foreground' and the icon below is for the 'Background'. To fill a selection with colour while floating:
- Press Alt+backspace, and the selection will be filled with the colour of the brush or

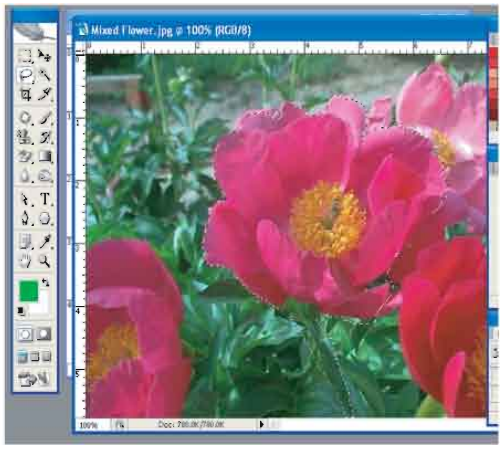
Foreground. If you press Ctrl+backspace or only backspace, it will be filled with the colour of Background or canvas.

- The selection filled with colour will float. It can be shifted elsewhere by dragging.
- The object will stay at the same position after shifting the selection.
- If the shifting is done by pressing the Ctrl button, the object being shifted will be cut.
- Press Ctrl and Alt during shifting, and the object being shifted will be copied.
- The selection will go away if you click the mouse pointer outside the selection.

The Use of Feather

- Typing the number from 0-250 in the box of feather on the option bar, the edge of the object can be softened. The room of the feather extends equally from the edge of the object to the inside and outside. If 10 is typed in the feather box, the softness of the edge will be 20.
- The feather effect will be activated by pressing enter button after writing different numerical figures in the box. Fill colour by using either the rectangular marquee tool or the elliptical marquee tool, and the effect of feather will be visible then. The effect will be still viewed after pasting the cut or copied object.

Select with Lasso Tool and Polygonal Lasso Tool



- Select the lasso tool in the toolbox. Numerous selections can be made with lasso tool such as
- Clicking and dragging on the canvas after selecting the lasso tool, selections of a non-circular and uneven edges can be made. If you release the finger from the pressing position on the mouse while dragging, a closed selection will be created from that position to the first clicking point.
- By clicking inside the selection while floating, it can be shifted elsewhere by

dragging. Filling any floating selection with colour, it can be filled either with the same or a different colour.

- Opacity is used to determine the thickness of colour.
- The 'Fill' dialogue box will come after giving the 'Fill' command under the 'Edit' Menu.
- The foreground is kept selected in the 'Use' box of 'Contents' under the 'Fill' dialogue box. It can be changed from the list of the dropdown menu, if required.
- In the opacity square of the dialogue box, type a number to determine the thickness of colour. The full intensity of colour is 100%. If the percentage is small, the colour will be light. Type 50 in the Opacity box, and click the OK button, and the foreground of the selection will be filled with 50% of the total thickness.
- There is opacity in the option palette of selection too. The intensity of colour can be increased or reduced by selecting the opacity of this palette.

Stroke

- The border of the selection can be made with the 'Stroke' command.
- Select the 'Stroke' command under the 'Edit' menu as the selection is floating, and you will get the 'Stroke' dialogue box.
- Any number from 1-16 can be typed in 'Stroke Width Box'. The extension of the border is determined with this number. To create the border outside, inside or at the middle of the selection, activate any of these three options by clicking the radio button attached with them.
- Click the 'Ok' button of the dialogue box.
- Borders can be created either by using the colour of the brush or of the foreground in the Stroke process.

Saving File

- Give the 'Save' command from the 'File' menu, and the 'Save As' dialogue box will be viewed.
- In the box of 'File Name' of the 'Save As' dialogue box, type the name of the file, for example, 'Practice'.
- Click the 'Ok' button in the dialogue box, and the file will be saved as 'Practice'.
- 'Practice' can be opened for further work later.

Layer

An idea of Layer is required before creating objects or editing photos. Almost at every stage of editing photos, you have to work through Layer.

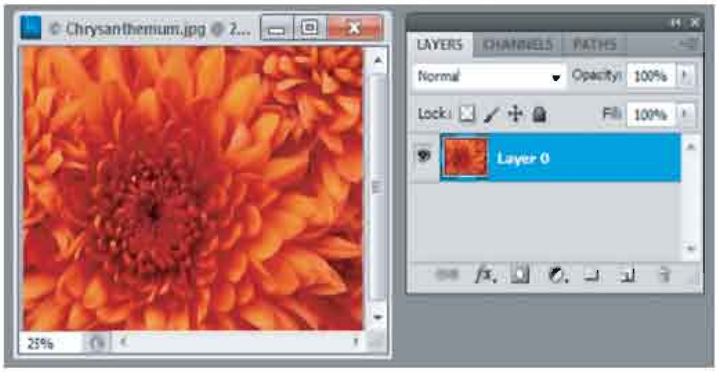
Layer is the screen of editing photos or the phases of a canvas. In this process, editing can be done by putting numerous transparent canvases one after another. If the canvas is transparent, editing becomes easier as the existing photos can be watched, but if the canvas of the upper layer is not transparent, the editing of the lower layer cannot be seen. If any photo with colour background is opened, 'Background' will be written on the layer palette. The background will not be transparent in spite of being white because white is a colour.

- Suppose that a file with the picture of a flower is opened. 'Background' is written on the layer palette. An icon of a lock is viewed to the right of the layer bar. It indicates that the layer has been locked. The object of a locked layer cannot be shifted by clicking or dragging with the 'Move' tool.

- If 'White' is kept as 'Background Content' and 'Background' while opening a new file, 'Background' will be viewed on the layer palette.
- 'Background' can be transformed into a layer to shift the sample picture of the flower elsewhere.

To accomplish the task

- Double click on 'Background' of the layer palette, and a dialogue box named 'New Layer' will be shown. In the 'Name' box 'Layer 0' will be viewed. Click the OK button of the dialogue box, it will disappear, and the 'Background' layer will be transformed to 'Layer 0'. The 'Background' layer will be 'Layer 1' if it is written after erasing 'Layer 0' in the 'Name' box of the dialogue box.



- If you click on any part of the picture with the 'Background Eraser' tool, that part will be erased, and the layer of the palette will automatically be transformed into 'Layer 0'.
- If any part of the picture is erased by the Eraser tool, the layer will not be transformed into 'Layer 0'.

Insert New Layer

Many layers should be used to work with more than one file in Photoshop. By keeping different pictures on different layers, their arrangement and editing should be done.

To add new layers in palette

- Click the 'Create a New Layer' icon below the palette, a new layer will be added above the existing or selected layer. This layer will be a transparent one. To create any new object in the newly added layer, shift it elsewhere if required. If five layers are created in this way, layer no. 2 will be above layer no. 1, no. 3 will be above no. 2, no.4 will be above no. 3. If more layers are added, those will be arranged serially.
- The arrangement of steps can be changed it required clicking layer no.2 and pressing on the mouse, drag it and release on layer no. 3, and it will be placed in between layer no. 3 and 4. After the selection of dividing line between two layers, release the pressure on the mouse.

You should remember that 'Background Layer' can not be shifted in this way. Background should be transformed into layer to replace it into another stage.

Make Picture Visible and Invisible on Layers

There is the icon of an eye on the extreme left of every layer. This icon is called 'Layer Visibility Icon'. Click on the icon of eye, it will disappear along with the picture on the screen. Click again on the empty place of the eye, and the icon will be visible again, and the picture on that layer will be visible again. The picture of the flower on the layer can be made visible and invisible for experimentation.

Thumbnail Icon

There is a thumbnail icon on the right side of the icon of eye. The meaning of thumbnail means the miniature version of a large picture. This miniature version on the layer along with the picture on the screen is viewed in the thumbnail icon. It facilitates the editing of the pictures on particular layers.

Clustering, Integrating and Segregating Palette

Numerous palettes can be panelled together. For example, Layer, Path and Channel can stay together. The names of the palette will remain as tabs. The tab which is clicked will be activated. The combined situation of several palettes is called clustered palette.

- The present palette is activated as a 'Layer Palette'. Click the layer tab and drag it outside the palette to release. The Layer palette will exist as an individual or single palette.
- Again clicking the tab of the individual Layer, release another palette inside by dragging it. Thick lines around the palette will be viewed. Thus the Layer taken by dragging will be included in the cluster.
- If the 'Layer' palette is not viewed on the screen, select the 'Layers' command from the 'Window' menu, and you will get the 'Layer' palette.

Making Layer Object

The process of making Selection and filling it with colour has been learnt. Now we will learn how to make two simple objects with rectangular and circular selection tools. We will learn how to write using the text tool too.

A. Creating a rectangular object on Layer no. 1:

- Select White from the option of Background Contents of New dialogue box, and Background will be the base of the Layer palette. For making a transparent layer on a white background.
- Click on the icon of Create a New Layer below the palette, and a new Layer will be added above the selected layer. This will be Layer no. 1, and it will be transparent too.
- A rectangular selection will be created on Layer 1 with the Rectangular Marquee Tool, and that will be filled with green colour.
- The rectangular object can be shifted elsewhere by the Move tool.

B. Insert Layer no. 2 in the panel, and make a circular object:

- Click on Layer no. 1, and it will be selected.
- Click the icon of 'Create a new layer' below the palette, and it will be a transparent layer.

Or

- If the New Layer command is selected from the dropdown menu of the layer palette, the New Layer dialogue box will be viewed. In the square space of the Name of the dialogue box, Layer 2 will be viewed. Type Circle in the Name box and press the Ok button, and the dialogue box will disappear. A new layer named Circle will be inserted above layer no.1 in the layer palette.
- Now create a circular selection with the Circular Marquee Tool so that half of the circle will rest on the green field and the other half on the white.
- The selection will be filled with red colour, and a red circle will be viewed in thumbnail of Layer circle.

C. Preparing Text Layer

- You should keep in mind that if text is started with the Type tool, the text will automatically be written on the Text layer. The new text layer will be transparent.

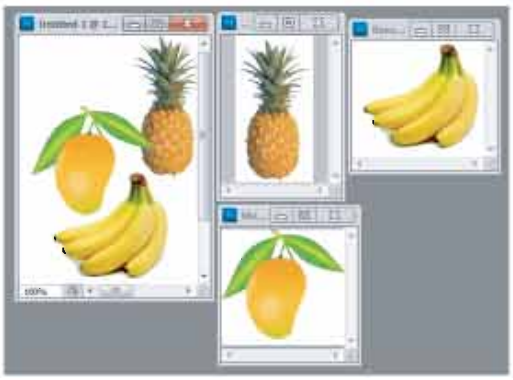
To write on Text Layer:

- Click on the canvas selecting the Type tool from the toolbox, and instantly a new layer will be added to the Layer Palette.
- Selecting the Text tool, click the mouse pointer on the canvas, and the requisite dropdown option list will be found on the Option bar to determine the font, font size, etc.
- Select SutonnyMJ from the dropdown list of fonts.
- The size of the font will initially be selected 72 from the dropdown list of font.
- The font colour will be initially black.
- Type 'সোনার বাংলা', and it will added as a new layer. The letter 'T' will be viewed as a thumbnail of the text layer on layer palette.
- The text can be shifted elsewhere with the Move tool or the mouse pointer.
- Now the square, circle, and text can be shifted anywhere with the Move tool.

- If the combined position of the three objects is satisfactory, the file can be saved for further use.

Transferring Picture from One File to Another

All the pictures should be transferred to a single file to work together. Prepare an empty file named Default Photoshop Size. Another file called Banana is opened with the pictures of bananas. Now clicking on a banana with the Move tool, and drag it to the Window of the empty file. The picture of the banana will be shifted to the empty file. Close the file of Banana.



In the same way, more pictures of mangoes, pineapples, etc. can be prepared and shifted to the new file.

Fixing Target Layer

- The layer in which the picture is edited is called Target Layer.
- Any picture of any layer can be edited whenever required. The picture of a single layer can be edited once.

To change a layer into Target Layer:

- Click the mouse pointer on the layer, and the layer will be changed into the Target Layer. The Layer will be viewed and selected then.

Changing the Opacity of the Layer

- Opacity is the intensity of colour. In the opacity text box on the right side above the Layer palette, 100% is viewed as the full intensity of colour. If you put mouse pointer on Opacity, it will be transformed into a two-pointing arrow. When it will be dragged to the left, the opacity will decrease, and when it will be dragged to the right, the opacity will increase.
- Or by typing a numerical figure in the opacity textbook the opacity can be changed.

Removing Layer

Select the Layer to be removed. Then

- Give the Delete Layer command from the pop-up menu of the Layer palette.

Or

- After selecting the Layer, click the icon of Delete Layer below the palette, and a dialogue box with a question, 'Are you sure you want to remove this Layer?' will come. If you click the 'Yes' button, the layer will be removed, but if you click 'No', the removal process will be stopped.

Combining or Merging Layers

Sometimes it is required to edit all the layers together in Photoshop. After finishing the task, if it is required to take a print out by a different printing machine, it should be copied on CD or pen-drive. The size of the file will be small for getting this task done smoothly. The size of the file will be comparatively small if the layers can be combined.

To combine layers

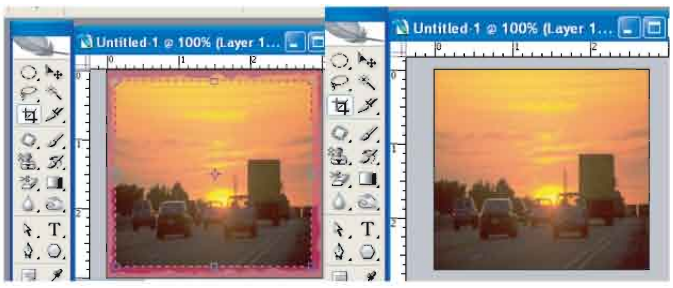
- There are three commands called Merge Visible, Flatten Image, and Merge Down on the pop-up of the Layers palette.
- If any layer is invisible, give the command of Merge Visible, and only the visible layers will be combined.
- If the Merge Down command is given, the selected layer and the layer below of it will be combined.
- If you choose Flatten Image, all the layers will be combined.
- If there is any invisible layer, an inquiring message will come whether it will be removed or not. Click the Yes button, and the invisible layers will be removed and the visible layers will be merged.

Cut, Copy, Paste and Paste into

You may select any object or image either fully or partially, and cut, copy and paste it. If you paste any object after cutting or copying, a new layer is created, and the object is pasted on the new layer. If any transparent layer is created before pasting, any cut or copied object can be pasted on the layer.

The Use of Crop Tool

The border of pictures collected from different sources can not be perfect or precise. It can be required to cut off the edges or



unnecessary parts. In spite of that, the image can also be tilted to one side.

Before starting editing, this kind of problem can be mended. The Crop tool is used to cut off the unnecessary parts of an image. Crop means cutting off.

- The border of this old picture is uneven, and the first step of editing the picture will be cropping out the uneven edges. To get it done:
- Select the Crop tool from the toolbox;
- Select the necessary part keeping the uneven parts outside by clicking and dragging it like the rectangular marquee tool.
- Eight hollow square boxes will be viewed, four on the arms of the selection and four on the comers. By clicking any one the boxes and dragging it, the area of the selection can be either reduced or increased.
- After fixing the selection area, press the enter button of the key board, and the area outside the selection will be cropped.
- If you think that the crop command should not be given even after selecting, press the Esc button to undo the effect. Selection can be made again if required.

Cropping up Tilted Picture

- To crop any tilted picture, the picture is to be opened and the Crop and Straightened Photo command is to be selected from the sub-menu of Automate command in File menu. This process is applicable only for solid background. If the background is of multicolor, the work of cropping will be impossible. In that case
- Select with the crop tool.
- The mouse pointer will be transformed into a curved pointer or rotate tool. The selection will be attached with the tilted position of the picture, and the area of cropping will be finalized with other handles.
- Press the Enter button, and the cropping up of the picture will be done, and its positioning will be straight.

Use of Eraser Tool

- When any color is erased by the eraser tool, the color is covered with the color of the canvas. If the color of the canvas is white, it seems that the color

is being erased, but if the color is different, it will be viewed. The picture on transparent layer will be simply erased.

- Press Cap Lock to erase the minute detail, and the eraser tool will take the shape of plus (+) sign. The editing of small parts will be done then.
- The work of erasing can be done by selecting a brush, pencil, or block from the list of Mode drop-down of the Option bar on eraser tool. The rubber eraser works like an electronic version if a block is selected. The Opacity options of other tools can be used if they have been selected.

Creating Blend with Gradient Tool

The paint Bucket Tool is kept on the same position of the Gradient Tool. If you select the Gradient tool, icons of creating five kinds of gradient will be viewed on the Option bar, for example, Linear Gradient, Radial Gradient, Angle Gradient, Reflected Gradient and Diamond Gradient.

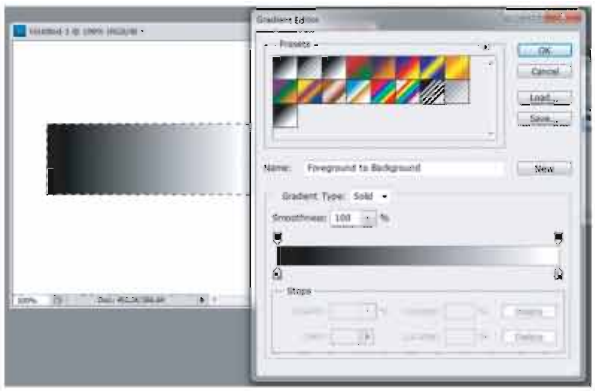
Blurring of a color from the beginning to the end is called blend. The color blurs from the beginning edge to another in linear blend. On the contrary, in radial blend, the color diffuses either from the centre to the periphery or the periphery to the centre.

To create linear blend with gradient tool

- A selection of 3 inches width and 2 inches high can be created.
- After selecting the gradient tool, bring the mouse on the canvas, and it will be transformed into a plus (+) sign. Now drag it from the left-middle of the selection to the other end, and release the pressure of the finger from the mouse pointer. It will be viewed that the selection starting with deep black color gradually diffuses to the end.
- A blend can be created from all directions. If anything is not selected, blend will be created through out the screen.
- Activate the radial gradient icon on the option bar by clicking it for creating radial gradient.
- The mouse after bringing onto the screen will be transformed into a plus (+) sign. Now drag it from the middle of the selection to the other end, and release the pressure of the finger from the mouse pointer.

Editing Gradient

- The editing of gradient can be done by starting, finishing, and changing or combining colors in the dialogue box. To get the task done
- Gradient Editor Dialogue box can be viewed by clicking on the gradient bar.
- Color Stop triangles can be viewed on the left and the right end of the gradient slider of the gradient editor dialogue box, and the Opacity Stop triangles are found on the top of the same dialogue box. Suppose that the starting color of a linear gradient is red and the finishing touch is yellow. To use blue instead of red



- Click the Color Stop Triangle at the left end of the gradient slider, and a color swatch will be activated at the end. Click the Color swatch and the Select Stop Color dialogue box will be viewed. Selecting the blue color in this dialogue box, click the Ok button, and blue will be the Stop Color at the left-end on the gradient bar. Now drag with gradient tool from one end to another, and a gradient of a combination blue and yellow will be created.
- If you select the Color Stop at the bottom edge and Opacity Stop on the top edge of gradient slider, a diamond shaped icon will be viewed in the middle. This icon indicates the middle point of the gradient from where the color starts diffusing.

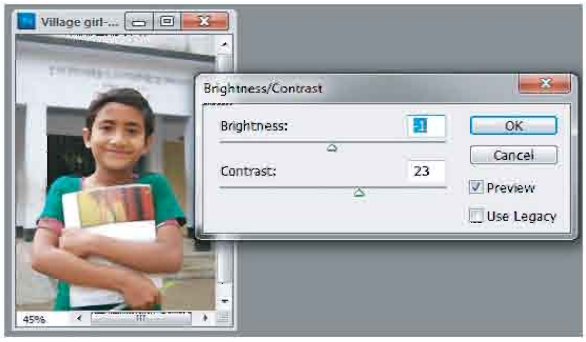
  After selecting the middle-point icon, type a position-fixing digit in the location box to fix the middle. The middle point can be shifted by dragging the icon either to the left or to the right.

Adding and Removing New Color and Color Stops

If more than two colors are to be used for a gradient, add new Color Stops to the slider. To do this

- Click anywhere at the bottom of the slider, and new Color Stop will be added to the diamond for determining color blending middle point. In the same way, requisite number of Color Stops can be added to the gradient slider.
- If any additional Color Stop is needed to be removed or cropped, click that color stop icon and drag it to the outside of the slider, and the Color Stop will be removed.

Adjusting Brightness and Contrast of Picture



Pictures that have been scanned or captured by a camera can be indistinct. Visibility of color or black and white can not satisfy the expectation level. In that case, increasing the brightness and combining contrast are required. To increase the brightness and contrast

- Select the Adjustment command from the Image menu and get a submenu from where click Brightness/Contrast, and the related dialogue box will be viewed.
- By moving the triangle of brightness/contrast-slider in the dialogue box either to the right or to the left, the brightness and contrast can be increased or reduced.
- If any part of the picture is selected before coming of the dialogue box, increasing or reducing brightness and contrasting only the selected part can be done by giving the command.

Activate the Preview check box in the dialogue box by clicking it, and the work of the changing color can be viewed instantly. If the changed form does not seem satisfactory, press the Alt button of the keyboard and the Cancel button of the dialogue box will be changed into a Reset button. Keep pressing the Alt button and click the Reset button, and the work previously done will be cancelled.

Illustrator

Painting with Adobe Illustrator: Adobe Illustrator is the programme of drawing pictures, illustrations, making logos and designs. Just as the scope of making designs with Adobe Photoshop is limited, so is the scope of doing editing work in Adobe Illustrator. The main job of Illustrator is drawing.

Now, the artists of our country no longer use paint and brush for cover designing of books. They design covers by using Adobe Illustrator. Invitation cards, advertisements, posters, banners, bill-boards, etc. cannot be made without the illustrator.

There are plenty of programmes in a computer for making designs, but the Illustrator is popular for its facilities and varieties. That is why Illustrator is used throughout the world.

Apart from writing in the Illustrator programme by using a keyboard, writing is possible as an artist does by using brush. The font size and shape can be changed as required.

Like other programmes, open Illustrator and start making new files.

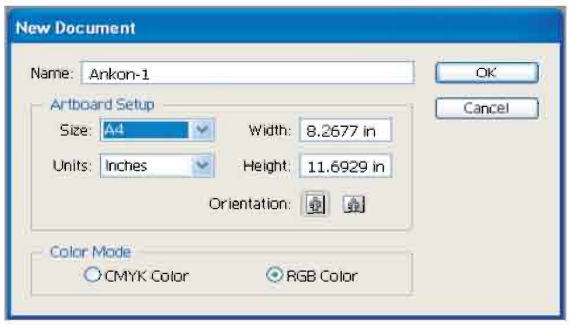
Open Illustrator Programme

To open Illustrator programme

1. A menu will be viewed when you will click on the Start button at the left end of the screen with the mouse pointer.
2. You will get a fly out menu placing the mouse pointer on All Programmes in this menu.
3. By clicking Adobe Master Collection menu in this menu, you will get another fly out menu. You will get the list of programmes of Adobe in this menu.
4. If you click on Adobe Illustrator from the list, the programme will open.

To Open File in Illustrator

- Select the New command from the File menu or press Ctrl N, and a New dialogue box will be viewed. In the New dialogue box
- Type a name in the Name dialogue box, for example, Ankon-1. Any name can be used instead of this one. A name which is easy to remember or compatible with the subject can be given. Finding out the file will be easier later on.



- A detailed drop-down list will be viewed by clicking the drop-down arrow of the size-box. Different sizes of the paper will be viewed here. The size of paper which is required should be selected by name, and the height and width of the paper will be seen in the box.
- The units of measurement are found in Units box. The users of our country are familiar with the measurement of inches, but points, picas, millimetres, centimetres, pixel, etc. can be used to work more precisely. Click the drop-down arrow in the unit box, and a detailed drop-down list will be visible. The requisite unit of measurement can be fixed from this list.
- Pictures of two people are viewed on the right of Orientation. If you click

the first one, the position of paper will be portrait, and it will be in landscape position if the second one is clicked.

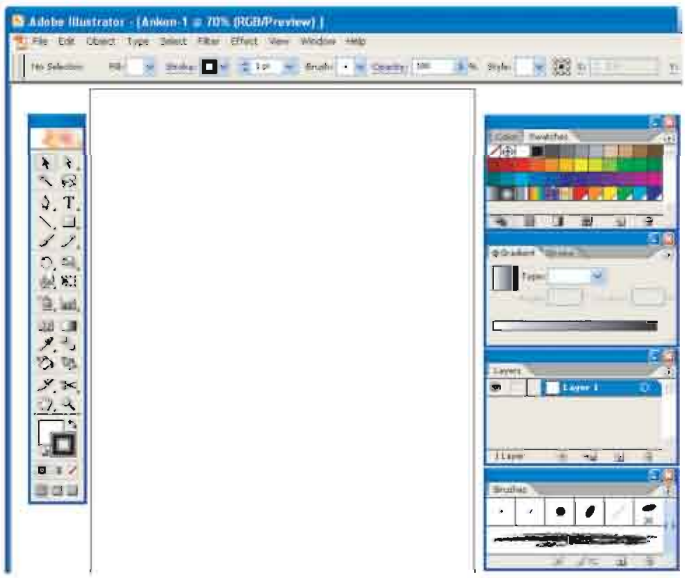
- Two options are shown as RGB and CMYK in Color Mode. CMYK mode is suitable for printing work, but RGB mode is better for electronic medium. However, on the computer screen, the difference of these modes are not precisely distinguished.
- Fixing the measurement, press OK in the dialogue box, and it will disappear. A new window will come.

In the Name box of the New dialogue box, type a file name, and it will be viewed on the title bar at the right side of Adobe Illustrator above the menu bar. If any file name is not typed 'Untitled ...' will be viewed on the title bar.

Work Tools

New vacant files will be found on the screen after creating a new file. Numerous objects like menu bar, toolbox, floating palette, scroll bar, etc. will be viewed for starting work.

Title Bar



After opening the Illustrator Programme, on the left-end above the screen, the other information of the document with the name of application on the title bar may be viewed, for example, Adobe Illustrator-[Ankon-1 @ 70 (RGB/Preview)]. Here, Adobe Illustrator is the name of application, Ankon-1 is the name of file if this name was given during its creation, and @ 70 (CMYK/Preview) is the size of visible area and presentation of color mode. The entire part stretching to the right is the title bar.

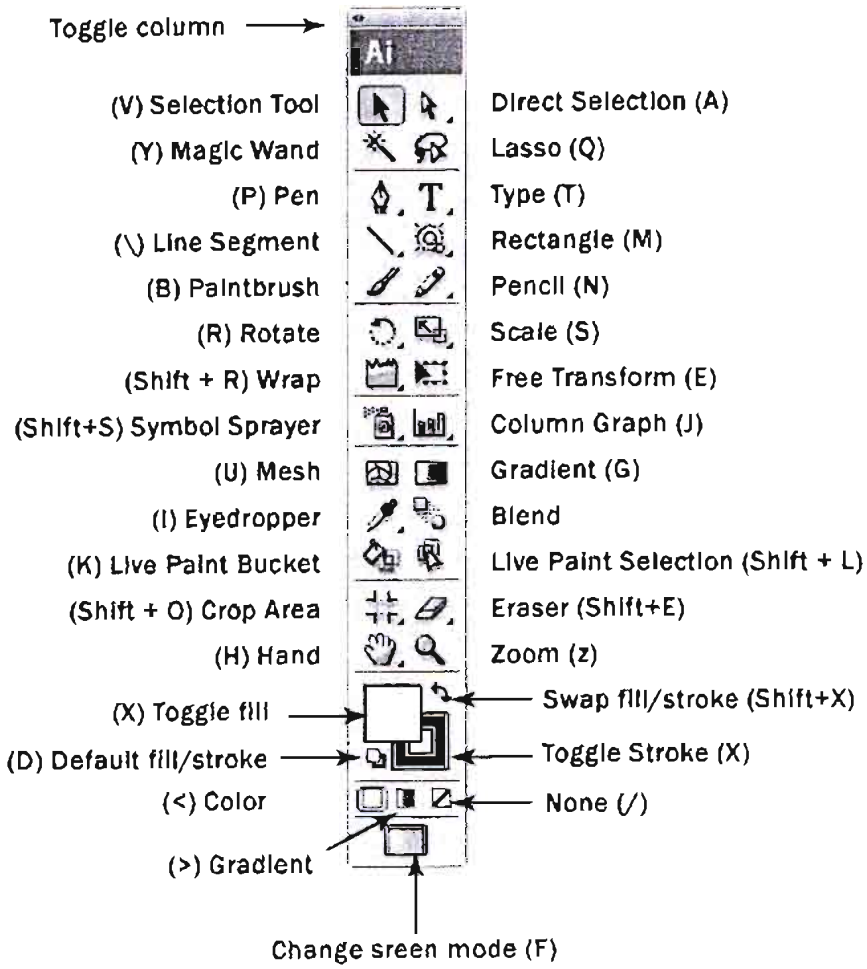
- If any name is not given during opening a file, it can be given after completing and saving the work too. Files are given different names, and when a file is opened, its name is viewed on the title bar to the right of the application.

Different kinds of tools and options for designing and drawing are arranged in Toolbox & Palette. Designing and drawing can be done by using these tools and options, and editing work is possible to get the image in its expected form.

Names of the Necessary Tools of the Toolbox

Names of the necessary tools should be known before starting work. Ellipse, polygon, star, and spiral tools stay on the linear position in the toolbox. These are called 'Group Tools'. A Right-angeled triangle is attached with these tools. If a triangle sign is attached with the tool, it means that more tools are kept in the same position. If you click the visible tool in the box and continue pressing the mouse, all the tools will be viewed together. Drag the mouse pointer on the required tool and click, and the tool will be visible in the toolbox.

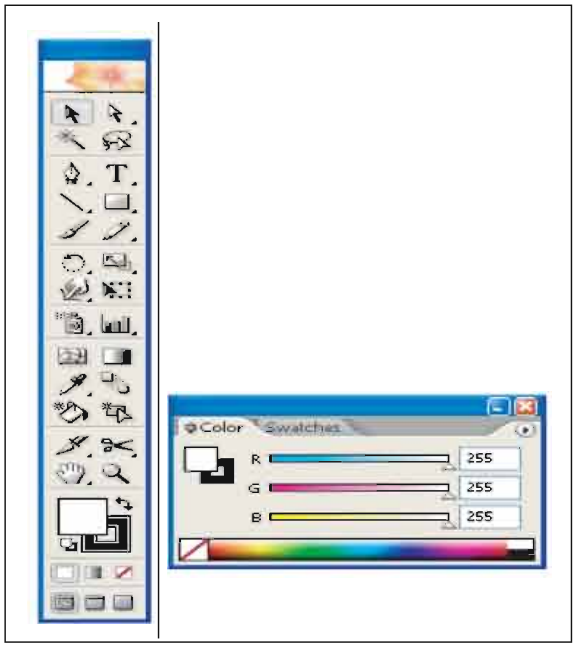
There are some icons in the swatch below the tools in the toolbox. Imposing color in an object or on the edges of an object or cancelling a command can be done with these icons. Create an object to understand the use of the icons. To make an object like this–



- Click the rectangle tool with the mouse pointer, and the tool will be selected.
- Bringing the mouse pointer inside the screen, and after clicking elsewhere drag diagonally right below for an inch, and release the finger pressure from the mouse. A rectangle or square object will be created.
- The object will be selected and filled with a color.
- Four hollow boxes will be viewed on the four corners of the selected object. Four small solid boxes will be viewed on the four corners.
- If the object becomes free from the selection, click Direct Selection Tool in the toolbox with the mouse pointer, and the Direct Selection Tool will be selected. Now bringing the mouse pointer inside the screen, click the object with Direct Selection Tool, and the object will be selected. In this situation, again click the Selection Tool, and four solid boxes can be viewed on the arms along with four solid boxes on the corners.

Filling Color on Object

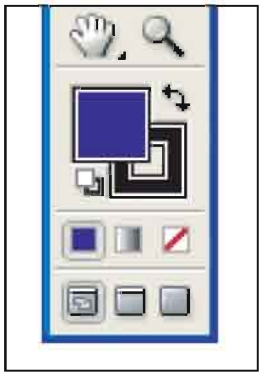
Fill and Stroke



- The edge or border of an object is called 'Stroke' and the internal part is called the 'Fill'. The use of the 'Fill' and 'Stroke' swatch is related to the color palette. If the color palette is not viewed on the screen, either give the Color command from window menu or press the F6 button, and the color palette will be visible. Click the Fill swatch and it will be activated and viewed above. Thus only the work of filling can be done. Only an object can be filled, not the stroke. Similarly, clicking the Stroke swatch, activate it and stay over the Fill swatch. Thus, color can be imposed on the strokes of object. It will be impossible to fill object with color from here.
- When the Fill swatch is active, click on the colour of Color Spectrum Bar of the color palette. The inside of the selected object will be filled with that color. Similarly, when the stroke swatch is active and the color that will be clicked on the Color Spectrum Bar, the strokes of the objects will be filled with that color. The color inside the object will remain unchanged.

- Stokes can be thick for a clear view. For having this effect, select the stroke command from the Window menu, and Stroke palette will be viewed on the screen. Select at least 10 from the weight drop-down menu in the Stroke palette. In this stage, if color is imposed or changed, it will be clearly visible.

Color, Gradient, and None



Color, Gradient and None are the three icons respectively below the Fill and Stroke swatch. Clicking Color and Gradient icon separately, activate the Color and Gradient palette. Click the None icon, and the fill of selected object or the color of stoke can be inactive or cancelled. If an object is filled with color or gradient, the color will be viewed. If the object is selected, the color will be changed as well.

Increasing and Reducing the Size of Object

Many minute jobs are done to create object. Doing these minute jobs may be troublesome in the usual size of the object. If a specific part of the object is enlarged, it facilitates the task. Viewing a page in an increased size while working in Illustrator is called Zoom in, and in decreased size is Zoom out. Object will also be viewed either big or small with increasing or decreasing size.

To view an object big or small, the visible size of the page will be made big or small by using Zoom Tool. To get the job done

- The Zoom Tool will be selected, if it is clicked in the Zoom Tool box.
- After selecting the Zoom Tool, if the mouse pointer is brought on the screen, it will look like a flint-glass, and a plus (+) sign will be visible in the glass.
- The size of the screen will be bigger when clicked with the Zoom Tool on screen. With the increasing size of the screen, the object will remain on the screen enlarged. If it becomes enormously enlarged, some objects will not be viewed on the screen. Clicking on the screen and dragging with the hand-tool, that part can be brought on the screen.
- Press the Alt button while the Zoom Tool is active, and the Zoom Tool will be transformed into the Zoom Out Tool. Keep pressing the Alt button and continue clicking with the Zoom Out Tool, the size of the screen will gradually become smaller.
- Press Ctrl - or Ctrl = button to complete the work of Zoom out and Zoom in.

Changing the Positioning of Page By Hand Tool

If the size of the page is made smaller or bigger, the necessary part of the object can go outside the visible area. In this case, to shift the object to a suitable place on the screen

- Select the Hand Tool by clicking on it in the Hand Tool Box.
- Click on the necessary object with the Hand Tool, dragging it to a suitable place, and release the pressure of the finger on the mouse.

In this way, the positioning of the original page can be changed. The object that has been clicked will not be shifted in a different way.

Mode of Viewing Object

There are some modes to view objects in the Illustrator programme. Any of these can be selected from the View menu as required.

- In Outline Mode, the object is viewed as an outline or in a linear shape. In this mode, editing of the shape or structure of the object, particularly a detailed editing of a line or path can easily be done.
- The object is viewed perfectly in Pixel Preview or Preview mode.
- The image viewed in Overprint Preview Mode can be printed out.

Creating Object

In the preparatory stage of creating objects, the elementary process of making different kinds of shapes should be learnt, for example, squares, rectangulars, circulars, and elliptic, multi-angular, starry, and spiral shapes. To create an object

- The Rectangle Tool will be selected if clicked with the mouse pointer.
- After bringing the mouse pointer inside the screen and clicking anywhere, drag diagonally below an inch and release the pressure on the mouse. A square or rectangular object will be created.

In the same process, select another object tool from the Tool box and make other objects. No object can be created only once. By erasing the object partially or fully, we can start in a new way. To get the task done, it is required to learn how to erase the entire object or part of the object.

Selecting Object and Erasing Borderline or Path

- If the object is filled with color, the object will be selected if clicked with the Selection Tool or Direct Selection Tool. Keep pressing the Alt button and click on the path of the object. The entire object will be selected.
- To erase the path of the object or the part of the path, select them with either the Selection Tool or Direct Selection Tool. Press Backspace or Delete button, and the Path or the part will be deleted.

If the Backspace or Delete button is pressed, the object is erased. Select the Cut command from the Edit menu, and the object goes to a temporary memory called clipboard and stays there until another object is cut or copied. When an object stays on the clipboard, selecting the paste command from the Edit menu will restore the object to the document.

Path

The path of the object can be formed with more than one segment. A single segment can also be used if necessary. The border of the object is called Path. A straight line is called Path too.

Selection Tool

- The selection Tool, Direct Selection Tool or Group Selection Tool can be used to select either the entire object or a part of an object.
- The selection tool is called the Black Arrow. Click the Selection Tool with the mouse pointer for using the tool, and it will be selected. If the mouse pointer is brought on the screen after selecting the tool, the mouse pointer takes the shape of a black arrow or selection tool. Click on the object and it will be selected. Selection Tool is also used to select the entire object.
- If any object is selected with the Selection Tool, rectangular, circular or bounding box is created around the object. Four hollow boxes on four corners and four on the four arms will be visible. These boxes are called Resize Box. Clicking and dragging on the resizing boxes, the size of the object can be enlarged and reduced. Keep pressing shift and drag, and the object will be bigger or smaller according to proportion.
- Clicking the centre of the selected object with the Selection Tool or on any of the arms or any part of the object and dragging, it will be shifted to anywhere.

For selecting more than one object together

- After selecting the first object, keep pressing the shift button and select the next object. In this way, select as many objects as required. When all the objects are selected only one bounding box will square them.
- By clicking and dragging the resize box of the bounding box, all the objects will be enlarged and shortened together.
- Click the mouse pointer on an empty space on the screen, the object will be selection-free. If any particular object requires to be selection free from numerous selected objects, click the object while pressing the Shift button.

Direct Selection Tool

The white tool on the right of the Selection tool is called the Direct Selection Tool. This tool is called the White Arrow.

The Direct Selection Tool or the White Tool is used to select the segment of the object or the entire object. A part of the object can separately be enlarged or shortened by selecting any anchor point of the object with the Direct Selection Tool.

Grouping Object

To create a group of objects

A. Select either all or requisite objects.
B. The selected objects will be grouped, if the Group command is given from the Object menu.

Clicking on a blank space, make all the objects selection-free, and then click any object with the black arrow or the selection tool, and a rectangular bounding box will be created around the grouped objects. Thus the objects inside the selection box will be selected together.

To make the grouped objects ungrouped:

A. Click an object, and the grouped objects will be selected.
B. Give the Ungroup command from the Object menu, and the grouped objects will be ungrouped.

Lock the Objects

While working with more than one object, it is required to keep one or more than objects locked. As a locked object can not be selected, the editing work can not be done. So the locked object can not be changed by mistake.

To lock an object:

A. Select a particular object.
B. Give the Lock command from the Object menu.

If it is required to edit or change a locked object, unlock it. To unlock an object select the 'Unlock All' command from the object menu. Thus all the objects will be unlocked. An unlocked object can be edited in the usual way.

Use of Cut, Copy and Paste Command

After selecting any object with the selection tool and giving the Cut command from the Edit menu, the object will disappear and it will be copied if the Copy command is given. Any cut and copied object is stored on the clipboard, and if Paste command is given from the Edit menu, the object will be pasted on the screen. The object can be shifted elsewhere by dragging it with the selection tool.

If any object is dragged while Pressing the Alt button of the keyboard, it is shifted after a copy is created.

Give the Paste in Front command, and the object will be placed above the existing object.

Give the Paste in Back command, and the copied object will be placed below the existing object.

Layer

Layer means step. In this process, editing can be done while keeping different objects on different steps. This layer or step can be compared to transparent glass or polythene. If three objects or pictures are created on three glasses or transparent media and placed on the other, three objects will be viewed. These three glasses or media are regarded as layers.

The facilities of working in the layer process are as follows:

- Arranging steps among the Layers;
- keeping more than one layer invisible;
- keeping layers locked;
- Adding a new layer, removing unnecessary layers, etc.

Creating New Layers

If Layer palette is not viewed on the screen, give the Layer command from the Window menu, and the layer palette will be viewed. At the beginning, only one layer will be on the palette. After finishing the work of a layer, add a new layer on the palette to create new object. To add a new layer

A. A new layer will be added on the layer palette when you click the Create New Layer icon below the row of Layer Palette.

B. If any layer numbered serially needs to be identified with a particular name, double-click the layer and a dialogue box called Layer Options will be viewed. Type the necessary name on the Name box, and click the Ok button. The serial number or name of the concerned Layer (if the name was previously given) will be changed into the name typed in the dialogue box.

Cancelling Layer

A. By selecting the Layer and the Delete command from the pop-up menu on the layer palette, the selected layer will be cancelled.

- In the process of deleting a layer of artwork or an object, a cautionary message like 'Delete Layer?' will be viewed. Click the 'Ok' button, and the layer will be deleted. Click the 'No' button, and the deleting process will be stopped. But by clicking and dragging the layer, on to the Delete icon, no such message will be viewed.

Merging Layers

After creating and editing objects of two or more layers, they can be merged together. To get the job done:

A. Select the layers.

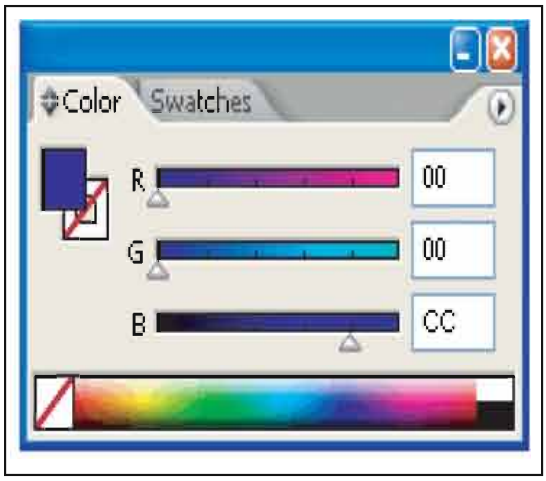
B. Select the 'Merge Selected' command from the pop-up menu of the layer palette, and the layers will be merged.

Use of Color in Object

After creating an object, fill in the color as required. The color palette, color bar, or color spectrum bar, gradient, etc. are used to fill color in the object.

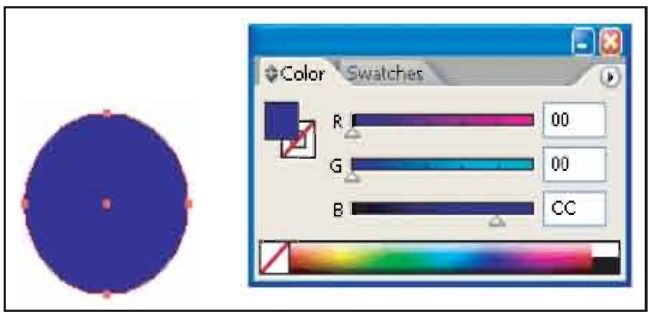
Color Palette

If the color palette is not viewed on the screen, give the color command of the Window menu, and the color palette will appear.



- On the left above the Color Palette, an indicator box of Fill and Stroke or Swatch is found. Color Slider and Color Spectrum Bar are found below it. If the work is done on gray scale mode, only one color slider will be viewed. If the work is done on RGB = Red Green Blue mode, 3 color sliders will be viewed, and if the work is done on CMYK mode, 4 color sliders will be viewed.

Fill Color



To fill color in any object:

A. Select the object.

B. Click the Fill Indicator box of the Color Palette, activate it. The activated Fill Swatch will stay above the Stroke icon.

C. Click the requisite color in Color Spectrum Bar.

- The selected object will be filled with the color in Color Spectrum Bar. On the extreme right of the Color Spectrum Bar, a Swatch of black and white color will be found. If the black swatch is clicked, the object will be filled entirely with a black color, and if the white swatch is clicked, the object will be filled entirely with a white color.

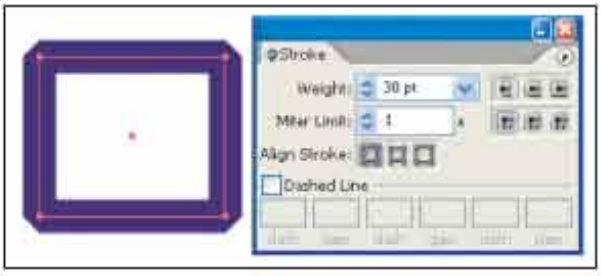
The Use of Stroke

The border of object is called Path. The measurement of making a path thick or thin is called Stroke. Objects of grouped and ungrouped path, straight, curved lines, etc. are controlled by Stroke. Controlling strokes means to make a path thick or thin and colored. Making a Stroke thick and thin can be done with the Stroke Palette. To get the job done

A. Select the object or path. If the Stroke Palette is not viewed on the screen, click the Stroke command from the Window menu, and the Stroke Palette will be viewed.

B. When the object or path remains selected, click the downward arrow of the Weight box in Stroke Palette and keep pressing the mouse, many measurement units will be shown in the dropdown list. Select a number from the list as required. If a small number is selected, the stroke will be thin, and if a large number is selected, the stroke will be thick.

C. A measurement unit can be typed directly in the Weight box, if required. The fraction of a number can be used too. The thickness and thinness can be determined from 0-1000 points.

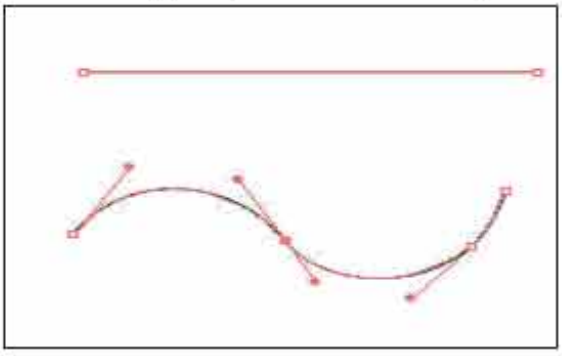


Pen and Pencil Tool

The main reason of the Illustrator programme being popular is the use of Pen Tool. It is possible to make complex and very small design and do the editing work with the Pen Tool.

Two anchor points are found at the two ends of a path or line. The first anchor point is called the starting point and the second anchor point is called end point.

There is a controlling handle with the anchor points of curved path and a control point outside the control handle. By clicking and dragging the control point, the curve of a line can be controlled. The anchor point, control handle, and control point are not viewed in the print out.



The Pencil Tool is another form of the Pen Tool. Curve lines can be made by dragging the Pencil Tool.

The Pen Tool is the main tool for drawing vector objects. A subtle object can be created by a keen path with the help of the Pen Tool.

Closed Path and Opened Path

A closed Path has no beginning and no closing point, as in a circle and square, etc. A closed path may have curved ends. On the contrary, an Open Path has a beginning and a closing end.

Pencil Tool and Pen Tool

A Path can be created easily with the Pencil Tool. By selecting the pencil tool from the tool box, and clicking and dragging it on the screen path, a drawing curved line is possible. The function of the pencil tool is like making a sketch on the paper. On the contrary, a path is created with the Pen Tool by clicking and dragging. To make a path with the Pen Tool

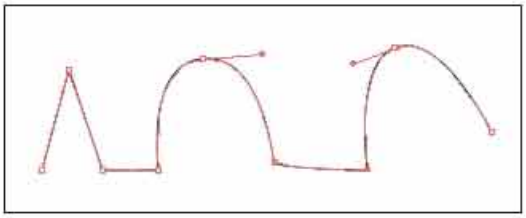
A. Select the pen tool from the toolbox. Click anywhere on the screen and release the pressure of your finger from the mouse.
B. Click a little bit above for the second time and release the pressure of the finger from the mouse.
C. Click on the right below from the place where you have clicked for the second time.
D. Click above the right a bit, and drag rightward.
E. Click on the right a bit below, and click again on the right from the position of next, moving a bit rightward from the previous click.
F. Clicking on the right above and drag further right from this position
G. Click on the right below.

A wave-like open path object can be created in this way.

Editing Path

A path cannot be created according to the expectation at the first attempt. After creating the path, give it the expected shape through editing. By editing the path, new anchor points can be added, and it can be removed if required or Cropped up or the two separated parts can be connected too. In this way, a change can be made as many times as required.

Adding Anchor Point



To add an anchor point at any point of the path:

A. Select the Add Anchor Point Tool from toolbox, and bring the mouse pointer inside the screen, a plus sign (+) will be found on the right below the Pen Tool.
B. Click any place of the path with the Anchor Tool Point, and a new anchor point will be set on that point.

- The new anchor point added on the straight path is called a Straight Corner Anchor Point and on the curved path is called a Smooth Anchor Point.

Removing Anchor Point

To remove any anchor point on the path:

A. Select the Delete Anchor Point Tool. After selecting the tool, bring mouse pointer inside the screen, and a minus sign (-) will be viewed below the Pen Tool.

B. If you click any anchor point with the Delete Anchor Point Tool, that anchor point will be deleted.

Editing Curve Path

A circle/rectangular object or a design will be created with the pen/pencil tool for editing path. To edit curve:

A. Selecting the Direct Selection Tool and after clicking an anchor point, drag and shift its position, and the curve and shape of the anchor will be changed.

B. Click an anchor point, and the handle of it will be viewed. Clicking and dragging the control point of any end of the handle, the part of the path related with the anchor point, and the curve can be reduced or increased. The direction can be changed too.

After creating open path with the Pencil or Pen Tool, the strokes can be thick or thin, and filled with color. After creating closed paths with the Pencil or Pen Tool, it can be filled with any color.

Writing Job

Writing is mandatory for the covers of books, magazines, posters, advertisements, cards, etc. The Type Tool is used for writing in Illustrator. Six kinds of Type Tools are found in Illustrator. Arrangement of writing can be done in three ways with these Type Tools, for example, Point Text, Area Text and Path Text.

Point Text

In the Point Text process, the way of typing is very easy. To type in this process:

A. Select the Type Tool from the toolbox.

B. Click any blank space of the screen.

C. Change the keyboard into Bangla for typing in Bangla.

D. Click 'Character' in ribbon on the screen, and the Character Palette will be viewed. Select the font from the Font Pop-up menu of the Character Palette.

E. Start typing following the rules of word processing. Click any letter with the Selection Tool, and a line will be viewed below it. This line is called 'Baseline'.

Editing Writing

The requisite commands will be found in the Type menu and in the Character Palette.

Select the Character from the Type command of the Window menu, or press Ctrl T, and the Character Palette will be viewed floating on the screen. When it is floating, it can be used as required.

Selecting Letters

Letters, and words can be selected according to the rules of word processing while the Type Tool is selected. Click with Direct Selection Tool in the writing, the entire typed part i.e. the entire writing with the baseline will be selected. In this case, the letters will not be highlighted. The baseline under the letters will not be viewed.

Changing Color of Letters

To change the color of the letters:

A. The requisite letters or writings should be selected.

B. Click on the color on the bar of the Color Palette or Swatch Palette. The selected letters or words will assume the color.

Deleting Letters

A letter or letters or a paragraph or the entire writing can be deleted by pressing the Backspace/Delete button, if it is selected.

Enlarging or Reducing Font Size

A. Click the downward arrow on the right side of Font Size box in the Character Palette as the letter or letters are selected and keep pressing the mouse, and a list of measuring numbers about the Font Size will be viewed. Continue pressing the mouse and take on a measurement number, and the number will be selected. After giving the command, release the pressure on the mouse and the size of the selected letters will either be enlarged or reduced.

B. If the requisite measurement number is not found in the drop-down menu, place insertion pointer in Font Size box by clicking directly.

- By pressing the Backspace button, delete the existing measurement number and type new number.
- Press Enter button and the selected letter or letters will either be enlarged or reduced according to the measurement number.

Increasing or Decreasing Font Size Vertically and Horizontally

To get the job done:

A. Click the drop-down arrow on the right of Vertical Scale and keep the pressure on the mouse to get the list of measurement numbers. If a number

bigger than 100% is selected, keep the pressure on the mouse and drag. The font size will be vertically big. On the contrary, if a number smaller than 100% is typed, the font size will be vertically small. 100% is the ideal measurement of letter.

To increase or decrease fonts horizontally:

B. Clicking the drop-down arrow on the right of Horizontal Scale and keeping pressure on the mouse to get the list of measurement number. If a number bigger than 100% is selected, keep continuing the pressure on the mouse and keep dragging. The font size will be horizontally big. On the contrary, if a number smaller than 100% is typed, the font size will be horizontally small. 100% is the ideal measurement of letter.

Baseline Shift

If any text written with the Direct Selection Tool is selected, the line seen below the text is called the Baseline. Shifting the lower edge of the text up or down is called Baseline Shift.

Selecting the measurement number from the drop-down menu in 'Set the Baseline Shift box' of the Character palette, or typing measurement number directly in the Set the Baseline Shift box, the measurement of Baseline Shift should be fixed. The use of a negative number will take the text below the baseline, and conversely an positive number will bring the text above the baseline.

The Leading

The space between the lines is called the 'Leading' which can be required for the text containing many lines.

A. By selecting a measurement number from the drop-down menu in Set the Leading box of the Character palette, or typing the measurement number directly in the Set the Leading box, and pressing the Enter, the Leading will be activated.

B. If the upward arrow button of Set the Leading box is pressed, the measurement of the Leading will increase, and if the downward arrow button is pressed, the measurement of the Leading will decrease.

Area Text

Any text typed or placed in square, rectangular, circular, elliptical or any closed path is called Area Text. To type or arrange text in a closed path:

A. Create a square, rectangular, circular or elliptical path.

B. After selecting the Type Tool, place the mouse pointer on the closed path, the Type

Tool will take the shape of the Area Type Tool.

C. Click on the anchor point of the path, and the insertion point will be placed inside the closed path, which will be used as a Text Box or Text Container.

D. Start the work of typing.

E. When you will reach the right edge of a line, the insertion pointer will automatically go down the next line. If typing continues in this way, the next line will be automatically started.

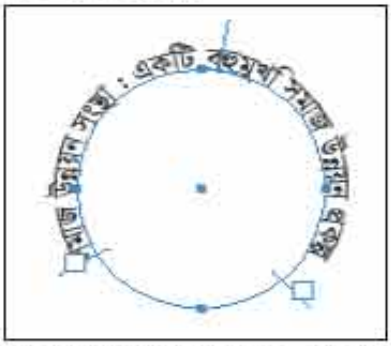
Typing in the Path

Typing inside and outside the closed path, and below and above the open path can be done with the Path Type Tool of Illustrator. Typing inside and outside a circular object like making a monogram can be done.

Typing outside Circular Object

A. Make a circular object, and if it is filled with color, click the None icon either of the Color Palette or Tool Box to delete the color of the circle.

B. Select the Type on a Path Tool from the Tool Box as the circle is selected. Click the anchor point of this circle with the tool, and the insertion point will be placed outside the Path of the circle.



- The circle must be selected while clicking. If it is not selected, step 1 and step 2 should be completed after the selection.

C. If typing is started, the text will advance following the path of the circle usually from left to right. In the same way, the text will be arranged outside rectangular object if required.

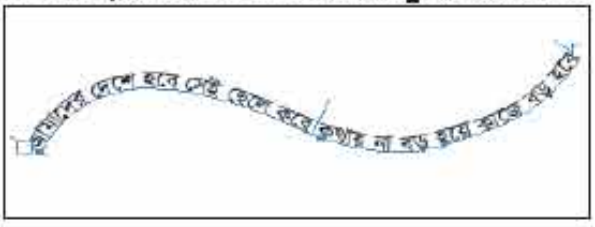
D. Click the text with the Direct Selection Tool and the Eyebeam between the Path and the text will be selected.

E. By clicking the edge above or below the Eyebeam and dragging it in a circular way the text can be shifted elsewhere.

Arranging Writing in Open Path

A. An Open Path can be created with the Pencil or Pen Tool.

B. Click on the selected Path with the Path Tool, and the insertion pointer will be placed on the Path.



C. Type following the usual rule.

- The Path and the Text will be selected if the text is clicked with the Direct

Selection Tool, and the text can be shifted elsewhere by clicking and dragging the Eyebeam while selected.

- The Path will be selected if clicked with the Direct Selection Tool, and the anchor point of the Path will be viewed. Now the Path can be edited following the rules of editing. If the Path is made curve, the text will follow the line.
- If the Path is smaller than the text, any additional text will not be viewed. When the Path will be extended, the rest of the text will be viewed.

Creating Outline of Letters

When the outline of letters is created, the edges of the letters will be transformed into a Path. By clicking and dragging the Path and Anchor point, the shapes of the letters can be changed.

To create the outline of letters:

A. Select one or more than one letter or word.

B. Give the Create Outline command from the Type menu or press Shift Ctrl O, and selected text will be transformed into the Outline.

When the letters will be transformed into the Outline, the text will be changed into graphics. The shape of the letters can be changed following the rules of editing a Path, filling color and adding gradient.

Placement of Image in Illustrator

To place an image in illustrator:

A. Give the Place command from the File menu and a Place dialogue box will come.

B. Select the required file from the Place dialogue box.

- It should be known in which folder and under what name the file has been saved. The required file will be selected after opening the specific folder.

C. Click the Place button in the dialogue box, and the image of the selected file will be viewed on the screen.

- A cross sign will be viewed on the image when the image of the Photoshop is placed in the Illustrator. Click outside and the cross-sign will be removed. Click the image with the Selection Tool, and the image will be selected and four resize boxes on the four arms and on the four angles will be viewed. By clicking and dragging the resize boxes, the images can either be enlarged or reduced.

Exercise

1. How many forms of media are combined in multimedia?
   A. 1 B. 2
   C. 3 D. 4
2. In which work is multimedia used?
   A. For preparing an examination result; B. For calculating shopping expenditure;
   C. For preparing a scoresheet of cricket; D. For making an animation film;
3. Which one is a multimedia Software?
   A. Microsoft Work B. Microsoft Powerpoint
   C. Microsoft Excel D. Microsoft Access
4. Application of Multimedia –
   i. has made the presentation of text impressive;
   ii. has made the work of printing and publication easy;
   iii. has made the keeping of accounts easy;

Which one is correct?

   A. i & ii B. i & iii
   C. ii & iii D. i, ii & iii

Read the chapter below, and answer the question nos. 5 & 6:

Mr. Rakib is the chief executive of a renowned company. A foreign delegate will come to visit his company tomorrow. He has made a presentation in his laptop and he will show it to them. He took the help of a piece of Software for the presentation.

5. Which Software is suitable for Mr. Rakib for his representation?
   A. Microsoft Word B. Microsoft Powerpoint
   C. Microsoft Excel D. Microsoft Access
6. The Software which is used by Mr. Rakib –
   i. will make the presentation impressive by using animation.
   ii. will show the activities of the company by using sound and video.
   iii. will prepare the accounts of his company.

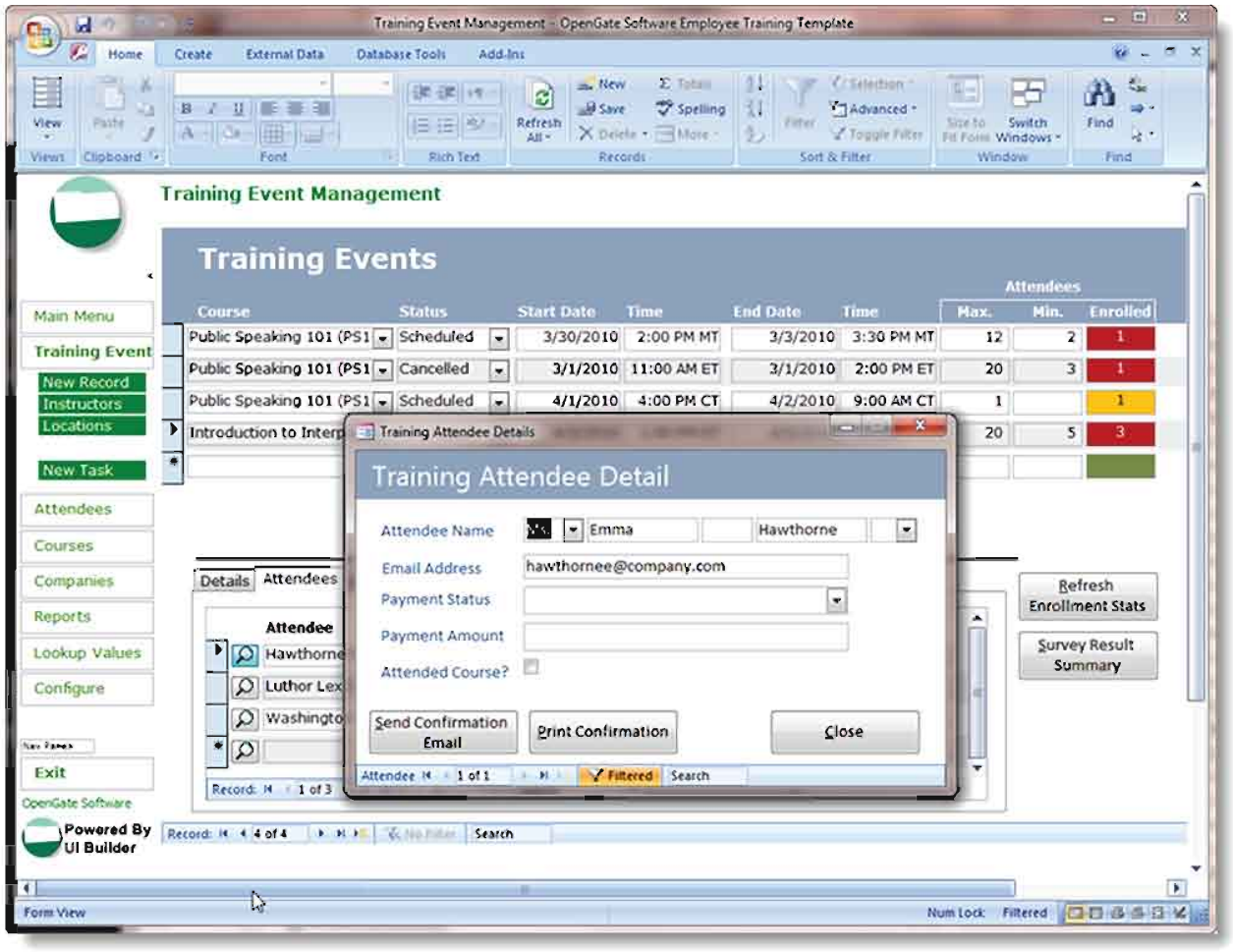
Which one is correct?

   A. i & ii B. i & iii
   C. ii & iii D. i, ii & iii

7. Explain the importance of Presentation Software to present anything.
8. 'The present publication industry is completely dependent on Graphics Software,' explain with reasons.

Sixth Chapter

The Use of Database

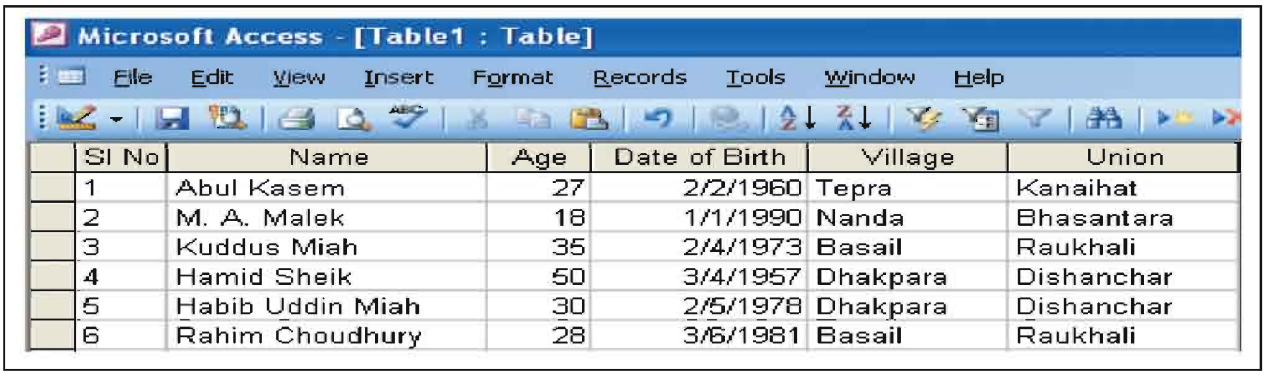


After completing this chapter, we will be able to:

- Analyse the concept of database;
- Describe the techniques of the Database Management System (DBMS);
- Expalin the importance of the Database Management System; and
- Prepare a database by using the software.

The Concept of Database

Database is called the storehouse of information. It is a computer oriented process by which collected information can be stored and recollected whenever needed. In other words, a database is a store of collected data from where information can be collected in different ways to make important decisions. In simple terms a database is an organised list of voluminous data from where a requisite data is identified and picked out easily and quickly. In this storehouse, voluminous information of different kinds can be saved. Users can collect any information from this store at any time as per their requisition. A database is



Sl No	Name	Age	Date of Birth	Village	Union
1	Abul Kasem	27	2/2/1960	Tepra	Kanaihat
2	M. A. Malek	18	1/1/1990	Nanda	Bhasantara
3	Kuddus Miah	35	2/4/1973	Basail	Raukhali
4	Hamid Sheik	50	3/4/1957	Dhakpara	Dishanchar
5	Habib Uddin Miah	30	2/5/1978	Dhakpara	Dishanchar
6	Rahim Choudhury	28	3/6/1981	Basail	Raukhali

also called a 'Database Management System' (DBMS). As the data saved in the information storehouse is used in different kinds of management work, it is called the Database Management System (DBMS). Classified information is stored in different files with different names. So the requisite information can be found easily.

A database is usually formed with columns and rows. Every column has a heading that indicates what type of data it contains. The headings are recognised as fields. A row is formed by some columns which are placed side by side. Each row is called a record.

Every column that contains Serial number, Name, Age, Date of Birth, Village, Union etc., is a field, and under these fields data, such as Abul Kasem, 27, 2/2/1960 Tepra Kanaihat are listed. Several fields, taken from the same row comprises a record. The database above has 6 fields and 6 records.

Data have been preserved in database files in computer since the 1960s. Back then, a database was formed with a data table, but now the concept of database has developed in many respects. Nowadays, one or multiple files of data tables, query, form, report, maxo, module, etc., can be saved under a database. So database is one or multiple files enriched with data or information. Some essential database programmes are Microsoft Access, Foxpro, Debase, Foxbase, Oracle, Fourth Dimension, Paradox, etc.

Characteristics of Database Programme

- Voluminous data is stored in an organised way by preparing tables in database, which can be used whenever required.
- The accounts of industries, inventory management, annual report, production and sale accounts, etc., can be stored and controlled easily.
- Any required information from the enormous database can be traced out easily.
- It is possible to prepare a report with the necessary records from the mammoth store of database. Graph, chart and picture can be inserted into the report.
- It is possible to create a mailing label with the necessary records by taking them from the database.
- The data entry is made limited by imposing conditions in fields for avoiding mistakes while making entry in the database programme. It is called input validation. Suppose that entry is being given to a salary field of a data table where minimum salary is Tk 2000 and maximum is Tk 11500. If a condition of the input validation of >=2000 and <= 11500 is given in this field, no entry will be accepted below Tk 2000 or above Tk 11500. An error message will be shown, if such as entry is made.
- A Data table can be created by separating records from the database by imposing conditions in the query.
- A relation can be created to exchange data between two tables on the basis of certain fields.
- An index is used to find out information from the database. If any index is created on a field, the value and the record-reference of the field is arranged in an order. An index file can arrange the records in different ways without changing the original data file. One can easily find a topic, just by seeing the content of a book. In the same way, it is possible to find information easily even from a database.
- It is possible to create a link among the files. So, when a piece of information saved in a linked file, it will be updated automatically in other linked files too.
- The record structure of data in a database can be changed if necessary. When some pieces of work need to be done repeatedly, a Macro can be created collectively with these jobs, and transforming those into a single action, it can be used repeatedly. It saves time and the users do not do the same work repeatedly.

The Concept of Database and Access

The work of a database is done in a microcomputer mainly with Microsoft Access software which is a popular database software created by the Microsoft corporation.

Preparation for Starting Work in Access Programme

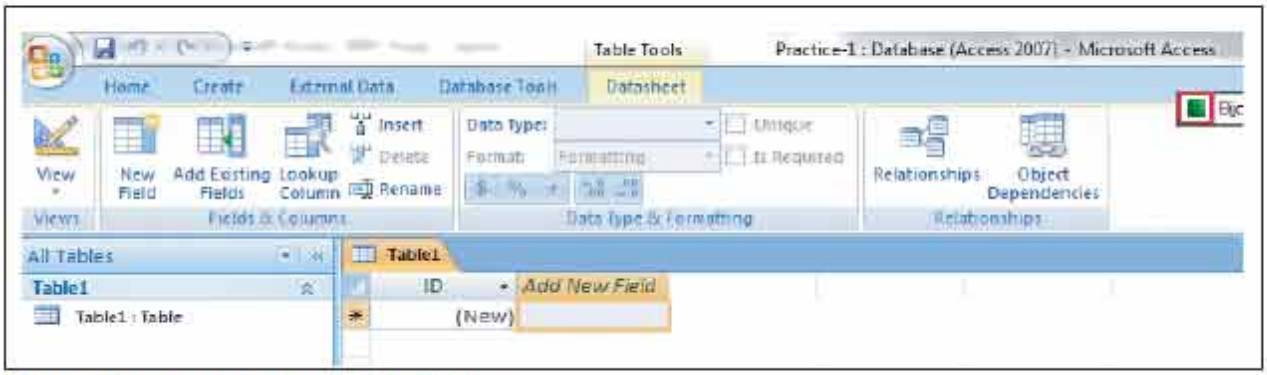
Microsoft Office Access needs to be installed in the computer for doing the work of database with Access programme.

Opening Access Programme

To open Microsoft access programme:

1. Click the start button by taking the mouse pointer on it below the left comer of the screen, and a menu will appear on the screen.
2. When the mouse pointer will be placed on All Programmes of this menu, another menu will be visible.
3. By clicking the Microsoft Office, you will get a list of programmes of Microsoft Office in another menu.
5. If you select the Microsoft Office Access command from this list, it will open.
6. Click on the icon of the Blank Database on the left side above the Microsoft Office Access window and put the file name of in the blank dialogue box. Type 'Practice-1'.

7. Click on the folder icon of the right corner of the File Name edit bar. 'Practice-1' will remain as the new file name in the dialogue box. If it is required to save in any folder, create that folder.
8. If you click on the 'OK' button in the dialogue box, the previous dialogue box will be restored.
9. If you click on the 'Create' button in the dialogue box, a blank window will come for creating tables. 'Practice-1: Database ...' will be written on the title bar of the window.



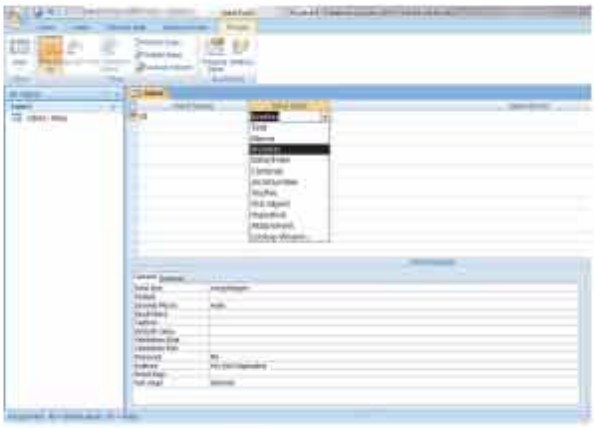
Creating Database Table

Creating the Database Table will be started from Practice -1 window. To do this:

1. Select 'Design View' from the drop-down menu of 'View', and the 'save as' dialogue box will come. In the dialogue box of table name, 'Table-1' will be written. The database table will be saved under this name. Click the 'Ok' button to save the name of the table.

2. The window of the fields of the database table will come.
3. Press the 'Tab' button after typing a serial number in the cell of the field name, the cursor will go to the cell of 'Data Type'. If you click in the drop-down arrow in this cell, a list of different types of data will be viewed such as text, number, currency, date/time, etc.

- Select the requisite data type from this list. If 'number' is selected, calculation can be done with the data of this field. Age can be calculated based on either on the date or time or information of the data field. Mathematical works like summation, subtraction, multiplication, division, etc. cannot be done with a letter oriented data field.



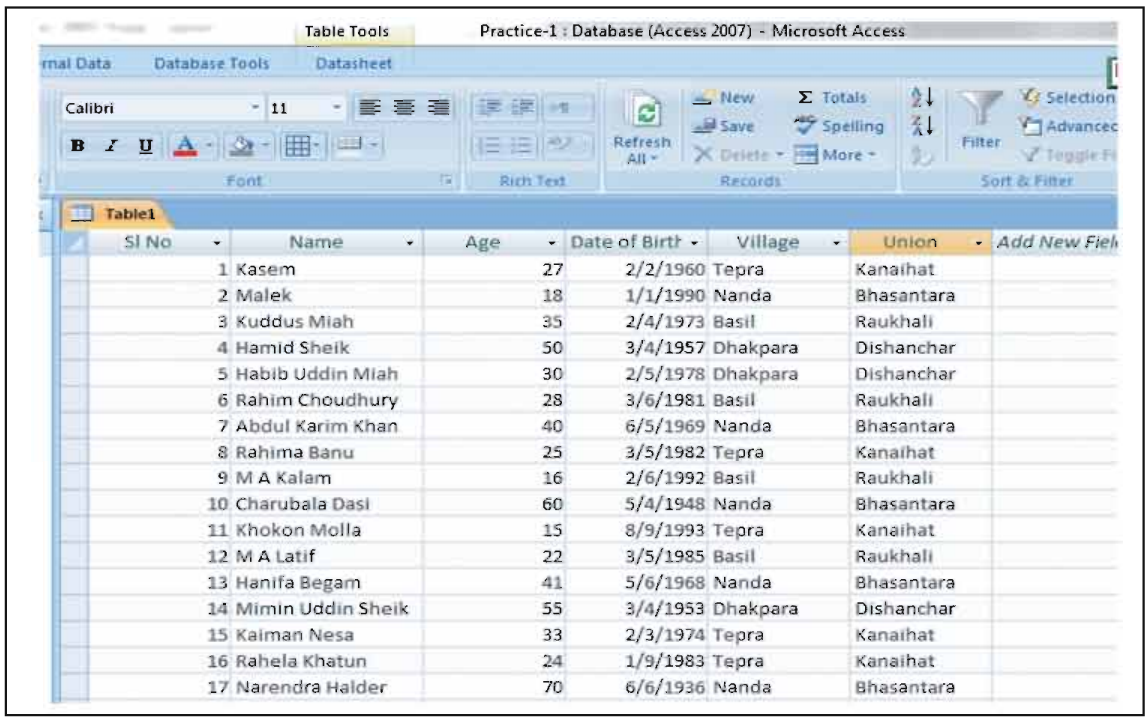
- With the selection of the data type, some other aspects of the data in the cells below the field properties should be selected too. For example, in the right cell of Field Size', it must be mentioned how big the size of fields and what the other aspects will be. The field has its an own standard. It can be changed if necessary.

The field size should be bigger than the requisite size so that data cannot be destroyed, but it should not be unnecessarily big in size.

4. After typing the field names and clicking 'View Icon' or selecting 'Datasheet View' from the drop-down view on the left comer above, a dialogue box with the saving command will appear.
5. If you click the 'Yes' button in the dialogue box, 'Datasheet View' or 'Table 1 View' window will be visible, and the data will be entered into this window.

Data Entry

The first field of 'Datasheet View' always remains selected. If it is not, select it and complete data entry by typing in the usual system of word processing.



Sl No	Name	Age	Date of Birth	Village	Union	Add New Field
1	Kasem	27	2/2/1960	Tepra	Kanaihat	
2	Malek	18	1/1/1990	Nanda	Bhasantara	
3	Kuddus Miah	35	2/4/1973	Basil	Raukhali	
4	Hamid Sheik	50	3/4/1957	Dhakpara	Dishanchar	
5	Habib Uddin Miah	30	2/5/1978	Dhakpara	Dishanchar	
6	Rahim Choudhury	28	3/6/1981	Basil	Raukhali	
7	Abdul Karim Khan	40	6/5/1969	Nanda	Bhasantara	
8	Rahima Banu	25	3/5/1982	Tepra	Kanaihat	
9	M A Kalam	16	2/6/1992	Basil	Raukhali	
10	Charubala Dasi	60	5/4/1948	Nanda	Bhasantara	
11	Khokon Molla	15	8/9/1993	Tepra	Kanaihat	
12	M A Latif	22	3/5/1985	Basil	Raukhali	
13	Hanifa Begam	41	5/6/1968	Nanda	Bhasantara	
14	Mimin Uddin Sheik	55	3/4/1953	Dhakpara	Dishanchar	
15	Kaiman Nesa	33	2/3/1974	Tepra	Kanaihat	
16	Rahela Khatun	24	1/9/1983	Tepra	Kanaihat	
17	Narendra Halder	70	6/6/1936	Nanda	Bhasantara	

The font, font size, etc. can be selected before or after data entry. Press the 'Tab' button after the completion of the typing of data of a field to take the cursor to the next field. After typing the data of the last field, press the 'Tab' button of the keyboard, and the cursor will go to the first field of next record. Creating a Table or Database will be completed in the same process. Keep in mind that you have to save data at regular intervals, and to do the job, click 'save icon' or give the 'save' command from the drop-down menu of the office button, or press Ctrl S button.

The above database table can be created according to the described process.

Changing Font Size

If you change the font size while keeping the insertion pointer in any cell of the table, the font size of the whole table will be changed. The font size of a single cell cannot be changed separately.

Correction of spelling error

Take the insertion pointer and click it to the cell where the correction of a spelling error is required. Following the general rule, type the correct spelling of the word.

Closing and Opening of a Database File

It is impossible to enter information, make corrections and do the editing at a time in a database file when the bulk of data is large. So, what is possible to do at a time should be done, and the file will be saved and closed. The rest of the work will be completed after opening it again.

To open a closed file

1. Enter the folder in which the file is saved.
2. Select the file the clicking on it.
3. Click the open button on the menu bar above, and the database file will be opened.
4. Double click on the 'Table' left, the table prepared as database will open.

The next phase will be started from here.

Inserting New Field and Column to Table

To insert new fields into database table:

1. If You Click either 'View' icon or select 'Design View' from the list of 'View Drop-down', you will see the 'Design View' window.
3. Click 'Design', and the ribbon of the 'Design Menu' will be exposed. Click 'Insert Rows' and a new field will be inserted above the cell where the insertion pointer stays.
4. Suppose that Male/Female will be typed as the name of the new field.

- Click the 'View' icon or select the 'Datasheet View' command from the list of 'View Drop-down', and a message box for saving the field will come. Click the 'Yes' button of message box.

  Getting back to the datasheet window, you will find that a new field named 'Male/Female' has been inserted. You have to give input into the field.

Delete Field or Column

To delete an unnecessary field:

1. Select the field. Put the insertion pointer on the field and it will be transformed into a downward arrow. Click and the whole column will be selected.
2. Click either the 'Delete' icon of the 'Home' menu or on the ribbon of datasheet menu. The whole column with the entire field will be deleted.

A cautionary message box will come before the deleting command is carried out. Click 'Yes' button and the selected field will be permanently deleted. Once deleted, it cannot be restored.

Deleting Records or Rows

To delete records or rows:

1. Select the record or row. After taking the insertion pointer at the extreme left of the row, click the mouse, and the whole row will be selected.
2. Click the 'Delete' icon on the ribbon of Home menu and a cautionary message box will come before the deleting command is carried out.
3. Click the 'Yes' button and the selected row will be permanently deleted. Once deleted, it cannot be restored.

Alphabetical and Cardinal Sorting of Data

The entire database can be sorted alphabetically and cardinally on the basis of either a field or a column after preparing a table. Alphabetical and cardinal sorting can be done in both Ascending and Descending orders. Ascending Order means sorting from small to lagre order (A... B... C... Z, 1... 10... 50... 100) and Descending Order means sorting from large to small order (Z ...C ...B ...A, 100 ...50 ...10 ...1) .

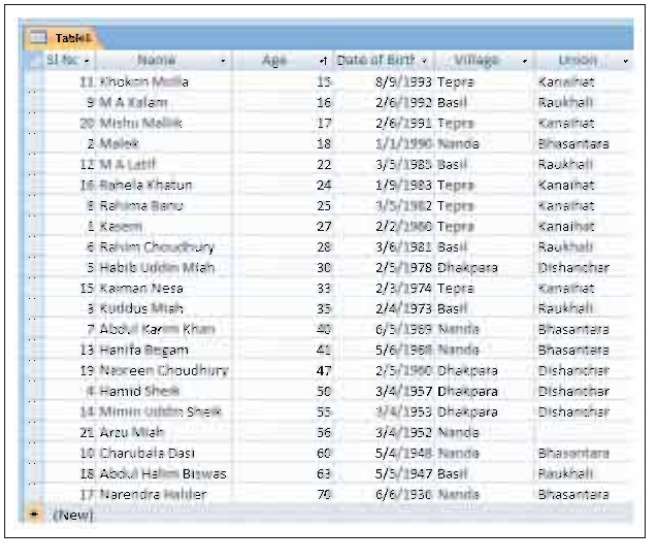


Table1

Sl No	Name	Age	Date of Birth	Village	Union
11	Khokon Molla	15	8/9/1993	Tepra	Kanaihat
9	M A Kalam	16	2/6/1992	Basil	Raukhali
20	Mishu Mallik	17	2/6/1991	Tepra	Kanaihat
2	Malek	18	1/1/1990	Nanda	Bhasantara
12	M A Latif	22	3/5/1985	Basil	Raukhali
16	Rahela Khatun	24	1/9/1983	Tepra	Kanaihat
8	Rahima Banu	25	3/5/1982	Tepra	Kanaihat
1	Kasem	27	2/2/1980	Tepra	Kanaihat
6	Rahim Choudhury	28	3/6/1981	Basil	Raukhali
5	Habib Uddin Miah	30	2/5/1978	Dhakpara	Dishanchar
15	Kaiman Nesa	33	2/3/1974	Tepra	Kanaihat
3	Kuddus Miah	35	2/4/1973	Basil	Raukhali
7	Abdul Karim Khan	40	6/5/1969	Nanda	Bhasantara
13	Hanifa Begam	41	5/6/1968	Nanda	Bhasantara
19	Nasreen Choudhury	47	2/5/1960	Dhakpara	Dishanchar
4	Hamid Sheik	50	3/4/1957	Dhakpara	Dishanchar
14	Mimin Uddin Sheik	55	3/4/1953	Dhakpara	Dishanchar
21	Arzu Miah	56	3/4/1952	Nanda	
10	Charubala Dasi	60	5/4/1948	Nanda	Bhasantara
18	Abdul Halim Biswas	63	5/5/1947	Basil	Raukhali
17	Narendra Halder	70	6/6/1936	Nanda	Bhasantara
(New)					

The datafield of names, villages and unions can be sorted alphabetically and the datafield of serial numbers, age and date of birth can be sorted cardinally.

Put the insertion pointer in any cell of the field to sort the data of a table on the basis of the age. Click the Ascending icon on the ribbon of Home menu, and the entire data will be sorted in Ascending Order

according to the age. Similarly, if you click the Descending icon, all data will be sorted as per age.

The record will appear differently after the sorting of data, but the other information will remain unchanged. For example, after sorting the data in the Ascending Order on the basis of age, the record of number 11 gets on the top of the table as he is the youngest of all. We will see that the other information remains unchanged. If the change is done mistakenly, give undo command immediately. The record will be restored.

Searching Information

To find out the name of a particular person from a database containing a huge bulk of data:

1. Click the 'Find' icon on the ribbon of 'Home' menu, and you will get the 'Find and Replace' dialogue box.
2. Write the name or part of the name of the person to be searched on the 'Find What' edit bar of the dialogue box.

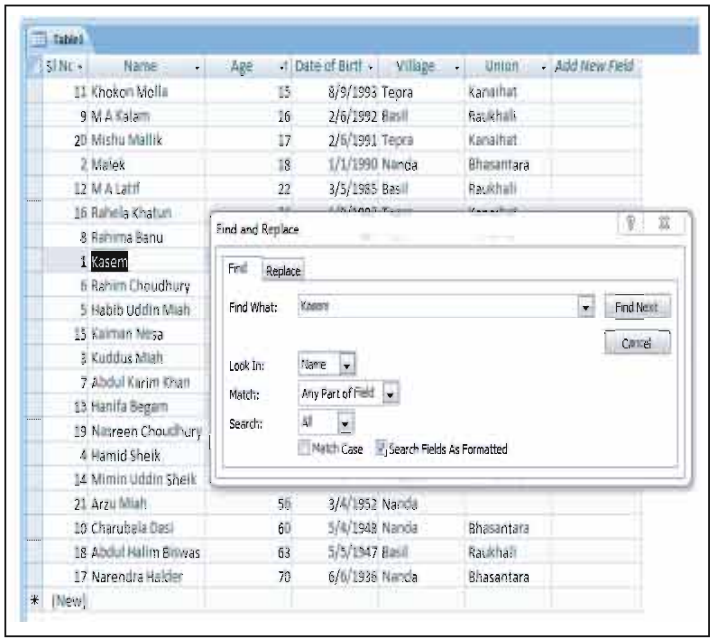
- A part of the name, either the title or surname can be typed.

3. Select a name from the list of 'Look in drop-down' of the dialogue box.

- From the list of 'Match drop-down' select 'Any Part of Field'.

4. Click the 'Find Next' button of the dialogue box.

- As soon as you click, the name, title or surname typed in the cell of 'Find What' will be selected. If the word is a title or part of many names, click the 'Find Next' button again. In this way, the next name having the same part or title will be selected. By clicking repeatedly the 'Find Next' button, all the names can be viewed. When the last name is viewed, a confirmation message about the completion of finding out names will come. If there is no need to find out any more names, click the cancel button of the dialogue box.



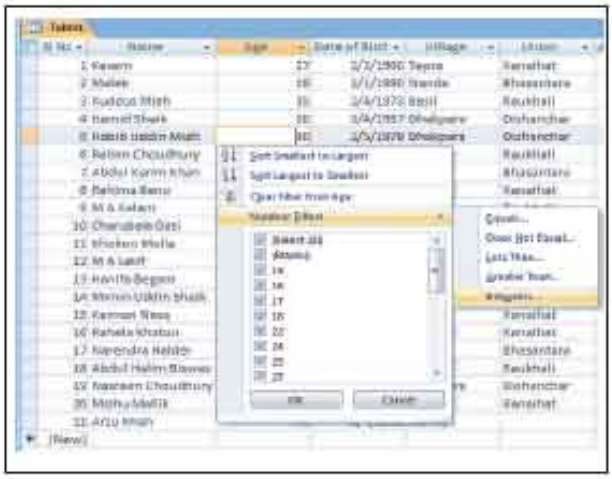
Searching Conditional Information

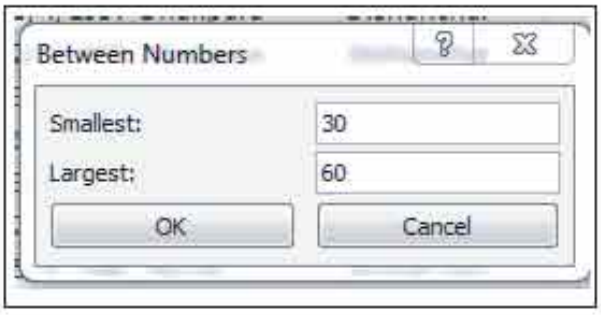
It may be required to find either the information of the people of village 'Nanda', or the union of 'Raukhali', or people's age ranged from 30 to 60, or people below 18 years of age, etc. Besides, a more specific information search may be required, and it is very easy. After inserting the conditions and giving the command, the information covering the conditions will be viewed on screen instantly. Searching conditional information are shown below:

Searching records of people whose ages range from 30 to 60.

To find out their records:

1. Put the insertion pointer in any cell of the 'Age' field.
2. Click the 'Filter' icon on the ribbon, and the Filter dialogue box will be viewed on the screen.
3. Select 'Between' from the 'Number Filters' drop-down menu of the dialogue box, and the 'Between Numbers' Dialogue box will come.
4. After typing 30 in the 'Smallest' cell and 60 in the largest cell in the 'Between Numbers' dialogue box, click the Ok button.
5. The records of the people aged between 30 to 60 will be viewed on the screen.





To undo the conditional records, place the mouse pointer on the 'Toggle Filter' icon of ribbon, and the icon will work as 'Remove Filter'. If you click now, the conditional records will be restored to the previous state and the 'Toggle Filter' icon will be transformed into an 'Apply Filter' icon. Click the 'Apply Filter' icon to keep the original arrangement active.

Tablet1

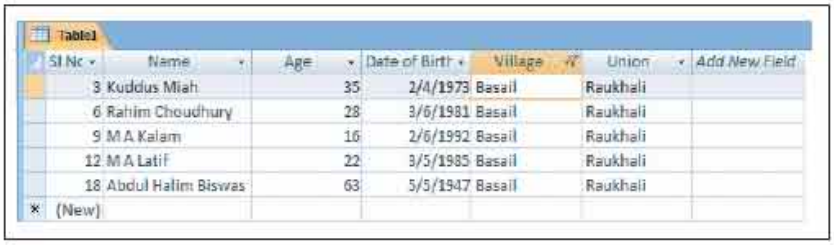
Sl No	Name	Age	Date of Birth	Village	Union
3	Kuddus Miah	35	2/4/1973	Basil	Raukhali
4	Hamid Sheik	50	3/4/1957	Dhakpara	Dishanchar
5	Habib Uddin Miah	30	2/5/1978	Dhakpara	Dishanchar
7	Abdul Karim Khan	40	6/5/1969	Nanda	Bhasantara
10	Charubala Dasi	60	5/4/1948	Nanda	Bhasantara
13	Hanifa Begam	41	5/6/1968	Nanda	Bhasantara
14	Mimin Uddin Sheik	55	3/4/1953	Dhakpara	Dishanchar
15	Kalman Nesa	33	2/3/1974	Tepra	Kanaihat
19	Nasreen Choudhury	47	2/5/1960	Dhakpara	Dishanchar
21	Arzu Miah	56	3/4/1952	Nanda	

Searching Information on the Basis of Village Name

There are names of four villages in sample database. Records of either any of the villages or two or three villages may be viewed on the screen.

To view any one of the four villages :

1. The records of the village you want to view, clicking the mouse pointer, put the insertion pointer in the cell of the village. Suppose that the insertion pointer is put in any of the cells of the village of 'Basail'.
2. You will get a menu by clicking the 'Selection' icon on the ribbon. Select Equals 'Basail' and Contains 'Basail'



from this menu, you will get only the records of the people of 'Basail'.

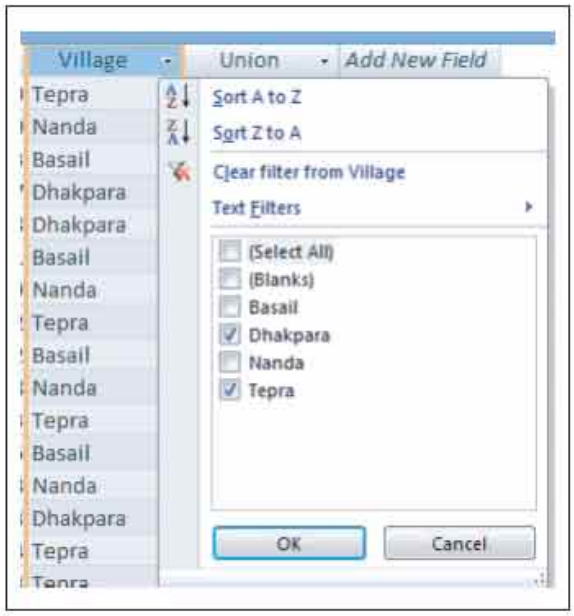
- If you select Does not Equal Basail and Does not Contains Basail, the records of other villages except 'Basail' will be viewed.

To undo or delete conditional records follow the instruction described above.

Viewing Records of More Villages

To view records of more villages at a time:

1. If you put the insertion pointer in any cell of 'Village Field', a dorp-down arrow will be added to the 'Village Field' at the right side. Click the drop-down arrow, a short dialogue box will come. Inside the dialogue box
2. Selecting 'All' and clicking 'Blanks' checkbox, remove the tick marks.
3. The tick marks in the checkboxes beside the names of the village the record of which you would like to view will be kept, and the other tick marks in the checkboxes will be removed. It is viewed in the image at the right side that keeping the tick marks in the checkboxes of 'Dhakpara' and 'Tepra', the rest of the tick marks will be removed.



4. Clicking the 'Ok' button of sortbox, view the records of the villages of 'Dhakpara' and 'Tepra'.

To undo or delete the shown records, follow the previous steps.

Table1 Table1Filter1

Sl No	Name	Age	Date of Birth	Village	Union
1	Kasem	27	2/2/1960	Tepra	Kanaihat
4	Hamid Sheik	50	3/4/1957	Dhakpara	Dishanchar
5	Habib Uddin Miah	30	2/5/1978	Dhakpara	Dishanchar
8	Rahima Banu	25	3/5/1982	Tepra	Kanaihat
11	Khokon Molla	15	8/9/1993	Tepra	Kanaihat
14	Mimin Uddin Sheik	55	3/4/1953	Dhakpara	Dishanchar
15	Kaiman Nesa	33	2/3/1974	Tepra	Kanaihat
16	Rahela Khatun	24	1/9/1983	Tepra	Kanaihat
19	Nasreen Choudhury	47	2/5/1960	Dhakpara	Dishanchar
20	Mishu Mallik	17	2/6/1991	Tepra	Kanaihat

Searching Information on the Basis of Male/Female

There is a field in the database on the title of Male/Female. Only the records of male and female can be viewed from this database. In the field, M stands for male and F stands for Female.

To get the information of only the female from this database

1. Clicking the mouse pointer, put the insertion pointer in any field of 'F'.
2. Click the 'Selection' icon on the ribbon, and a menu will be viewed.

Table1

Sl No	Name	Male/F	Age	Date of Birth	Village	Union
8	Rahima Banu	F	25	3/5/1982	Tepra	Kanaihat
10	Charubala Dasi	F	60	5/4/1948	Nanda	Bhasantara
13	Hanifa Begam	F	41	5/6/1968	Nanda	Bhasantara
15	Kaiman Nesa	F	33	2/3/1974	Tepra	Kanaihat
16	Rahela Khatun	F	24	1/9/1983	Tepra	Kanaihat
19	Nasreen Choudhury	F	47	2/5/1960	Dhakpara	Dishanchar
(New)						

- If you select Equals 'F' and Contains 'F' from this menu, only the records of the female of different villages will be viewed on the screen.

Query and Report

Collecting and viewing conditional information are possible in query system except the methods described above, but for saving conditional records and taking print out, viewed information should be saved as query. Even, it will be transformed as report to take print or supply as a printed matter. In query, information is presented in an attractive way.

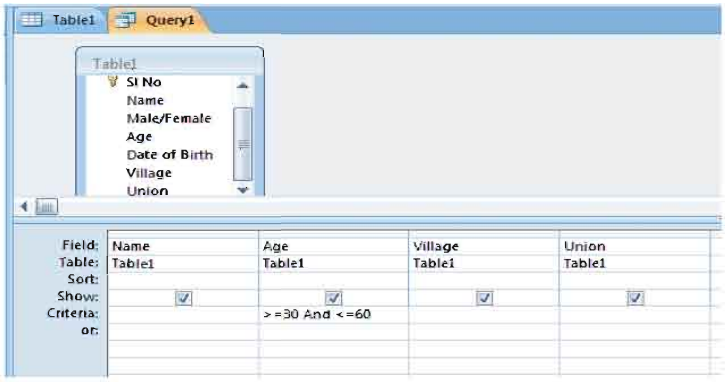
Collecting and Saving Information in Query Method

Suppose that collection and saving of information will be in the query process on the basis of created table. To proceed with the operation:

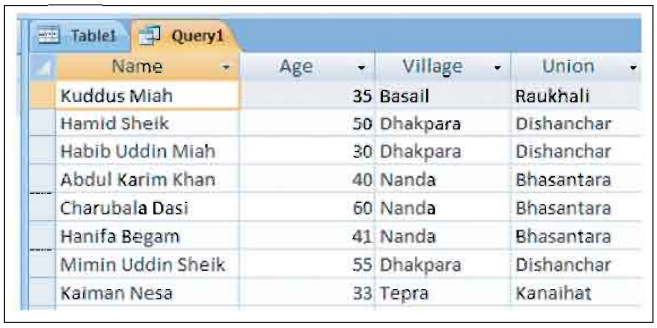
1. Open 'Table 1' of database. Only one table exists here.
2. Click 'Query Design' icon on the ribbon of 'Create' menu, a window of collecting information in query process will come on the screen. 'Show

Table' dialogue box will come with this window too.

3. If you select 'Table 1' in the 'Show Table' dialogue box and click the 'Add' button, all the fields or headings of table will be found included in the field string.



4. Now click the 'Close' button of the 'Show Table' dialogue box to close it.
5. If you double click on a name of the field of the field box, it will come in the first cell of the field string. In this way, all the fields can gradually be included in the field string or only the necessary fields can be included. In this sample, the fields of name, age, village, and union have been included.
6. The field on the basis of which the information is required, add condition in the cell of 'Criteria' below the field, for example, several conditions can be imposed on age factors. The information of the people above, below and within a certain age limit can be collected.
   A. If >30 is typed, the information of the people aged above 30 will be collected. If >=30 is typed, the records of people aged 30 and above will be shown.
   B. If <30 is typed, the information of the people aged below 30 will be shown. If <=30 is typed, the information of the people aged 30 and below will be viewed.
   C. If >=30 and <=60 is typed, the records of the people aged 30 and above and 60 and below will be shown.
7. After typing the conditions, click the 'Run' icon on the ribbon of the 'Design' menu, and the records on conditions will be shown.



- If you coolect information through the query process, the title 'Query 1' will be shown beside 'Table 1'.

8. Click the 'Save' icon, and the'Save as' dislogue box will come.

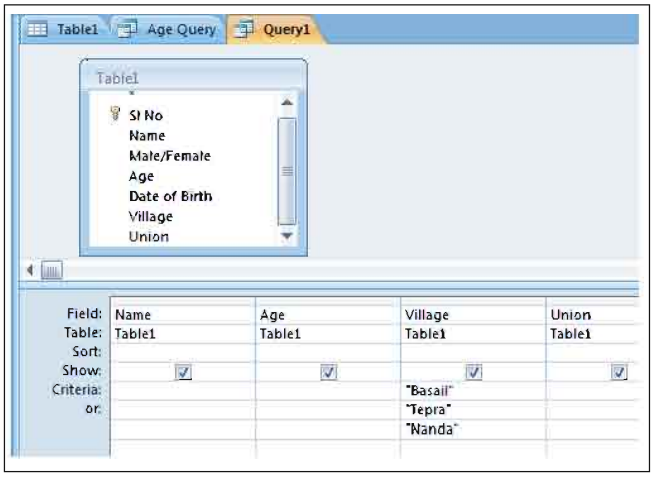
- After typing a name of the query, for example, 'Age Query' in the dialogue box, if you click OK button, 'Query 1' will be changed to 'Age Query', and

it will be enlisted in the database window. A Query icon will be shown with the name of the query. Double click on the file of 'Age Query' in database window, the file will be activated. As long as the file is active, prints can be taken, preserved, supplied and distributed.

Collecting Information on the Basis of Villages and Unions in Query Process

To collect information on the basis of villages and unions:

1. Select 'Table 1' from the database window.
2. Click the 'Query Design' icon on the ribbon of 'Create' menu, and get a diagram for collecting information. 'Show Table' dialogue box will come with this diagram.
3. Selecting 'Table 1' in the 'Show Table' dialogue box, if you click 'Add' button, all the fields will be found included in the field string.
4. Clicking the 'Close' button of the 'Show Table' dialogue box, close it.
5. If you double click on a name of a field of the field box, it will come in the first cell of field string. In this way, all the fields can be gradually included in the field string or only the necessary fields can be included. In this sample, the fields of name, age, village, and union have been included.
6. The field on the basis of which the information is required, add condition in the row of 'Criteria' below the field.
7. Clicking in the row of 'Criteria' straight below the village field, put the insertion pointer.
8. Suppose that you have to collect the records of the village of Basail, Tepra and Nanda. To get the task done



A. Type 'Basail' in the cell of 'Criteria'.

B. In the row below 'Basail', put the insertion pointer clicking the mouse and type 'Tepra'.

C. In the row below 'Tepra', put the insertion pointer clicking the mouse and type 'Nanda'.

- Quotation Marks will automatically be put around the names that will be typed.

9. Click the 'Run' icon on the ribbon of the 'Design' menu after typing the conditions. The records will be shown on the screen as required.

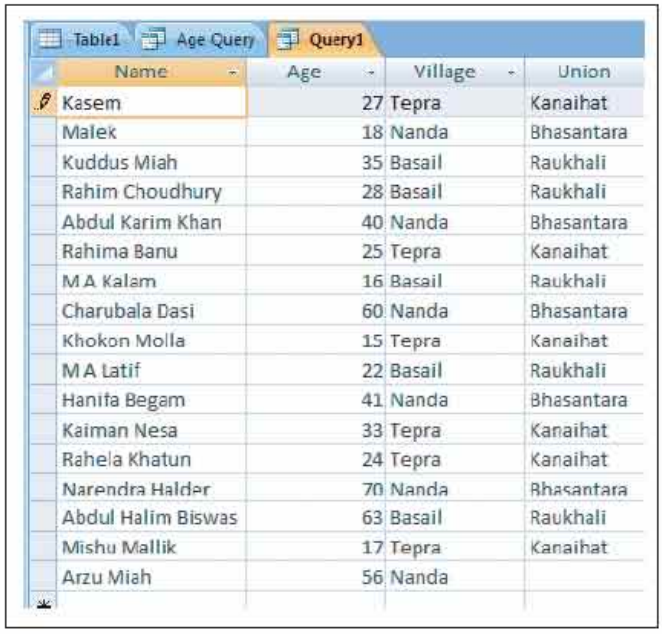


Table1 | Age Query | Query1

Name	Age	Village	Union
Kasem	27	Tepra	Kanaihat
Malek	18	Nanda	Bhasantara
Kuddus Miah	35	Basail	Raukhali
Rahim Choudhury	28	Basail	Raukhali
Abdul Karim Khan	40	Nanda	Bhasantara
Rahima Banu	25	Tepra	Kanaihat
M A Kalam	16	Basail	Raukhali
Charubala Dasi	60	Nanda	Bhasantara
Khokon Molla	15	Tepra	Kanaihat
M A Latif	22	Basail	Raukhali
Hanifa Begam	41	Nanda	Bhasantara
Kaiman Nesa	33	Tepra	Kanaihat
Rahela Khatun	24	Tepra	Kanaihat
Narendra Halder	70	Nanda	Bhasantara
Abdul Halim Biswas	63	Basail	Raukhali
Mishu Mallik	17	Tepra	Kanaihat
Arzu Miah	56	Nanda	

10 Click the 'Save' icon, and the 'Save as' dislogue box will come.

- After typing a name of query, for example, 'Village Query' in the dialogue box, if you click the OK button, 'Query 1' will be changed to 'Village Query, and it will be enlisted in the database window. The Query icon will be shown with the name of query. Double click on the file of 'Village Query' in database window, and the file will be activated. As long as the file is active, prints can be taken, preserved, supplied and distributed.

Table1 | Age Query | Village Query | Age Query

Age Query

Thursday, May 29, 2014
4:13:25 PM

Name	Age	Village	Union
Kuddus Miah	35	Basail	Raukhali
Hamid Sheik	50	Dhakpara	Dishanchar
Habib Uddin Miah	30	Dhakpara	Dishanchar
Abdul Karim Khan	40	Nanda	Bhasantara
Charubala Dasi	60	Nanda	Bhasantara
Hanifa Begam	41	Nanda	Bhasantara
Mimin Uddin Sheik	55	Dhakpara	Dishanchar
Kaiman Nesa	33	Tepra	Kanaihat
Nasreen Choudhury	47	Dhakpara	Dishanchar
Arzu Miah	56	Nanda	

10

Page 1 of 1

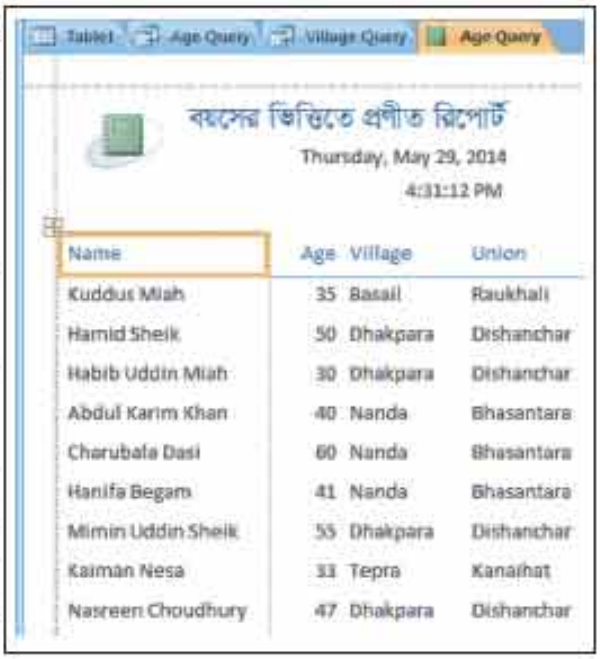
Report

Usually information is supplied or distributed in a report format. Report can be prepared either on the basis of the entire database or on a query file. A report

based on age query can be prepared. The file on which the report will be prepared must be selected. After the selection

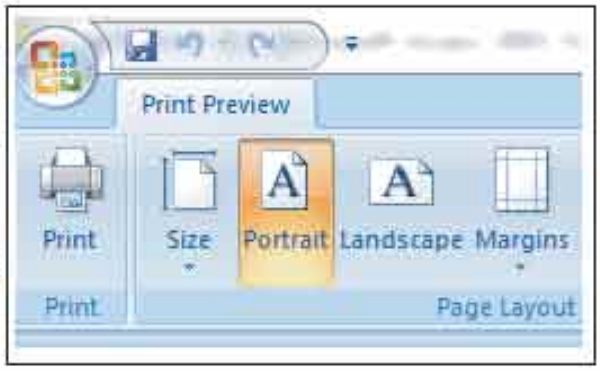
1. Click the 'Report' icon on the ribbon of the 'Create' menu, and the window of preparing report will be shown.
2. The fields of query files are kept in order in this window.
3. The sideways extension of these fields may be wider than it is required. To bring the measurement in usual position:

A. Select the field by clicking the name of the field. For clicking and dragging either the left or the right margin the measurement of the field can be reduced or extended.

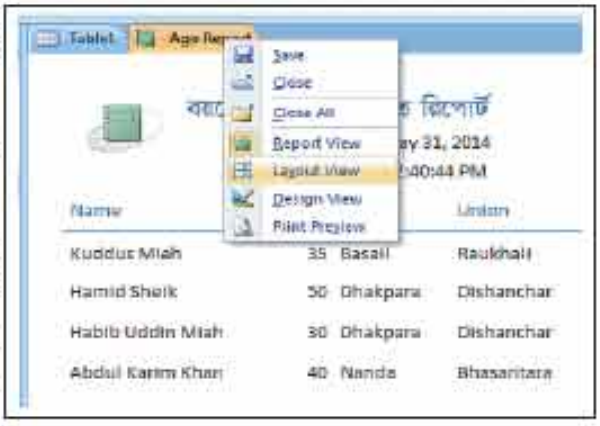


Besides, the page number below the report, boxes of date and time at the right side can be reduced and extended in the same way or placed in another position by dragging.

Double clicking on the title of the report it is possible to write in Bangla after erasing English letters.



B. Click the drop-down arrow of the 'View' icon and select the 'Print Preview' command from the drop-down menu. The print preview of the report will be on the screen



4. If the presentation is not in the expected order, click the 'Close Print Preview' icon on the ribbon at the right side, and the report will be restored to the 'Layout View'.

- If it is required to rearrange the size and shape of the field, do it repeatedly.

5. Before taking a print out, clicking the icons of size, portrait, landscape, margin on the ribbon, the measurement of page and margin should be adjusted as required. Then connect the printer to the computer and click the 'Print' icon and the printing will be started.
6. After the satisfactory editing work, click the 'Save' icon, and the 'Save As' dialogue box will be viewed.
7. In the 'Save As' dialogue box, type a name of the report, for example, 'Age Report', and the click Ok button.

- The report file will be saved as 'Age Report' and will be listed in the database window under the same name.

Adding Gridlines to Report

Gridlines means a pattern made from horizontal and vertical lines crossing each other on the records. Usually gridlines stays under the field, but gridlines can be added over and under the records and removed if necessary. To add and remove gridlines:

1. Click 'Report Tab' by pressing the right button of the mouse, and a drop-down menu will be viewed. Select 'Layout View', and the report will be transformed in a layout view.
2. Click inside the report.
3. The tools of adding gridlines to the ribbons will be active.
4. Click the downward arrow below the diagram of Gridlines, samples of different types of gridlines will be viewed. Of Horizontal, Vertical, Cross Hatch, Top, Bottom, Outline and None, the requisite gridlines will be selected. The sample of gridlines which will be clicked, will be added on or below the records.
5. Click the 'Width' drop-down arrow from gridline toolbox, and the samples of narrow and thick lines will be shown.

If a comparatively thick line is clicked, the gridline will be thick and on the other hand, if a narrow line is clicked, the gridline will be thin.

6. Click the 'Style' drop-down arrow from the gridline toolbox to change the style of gridline, the samples of different lines will be shown. The sample which will be clicked, the gridline will be changed accordingly.
7. Click the 'Color' drop-down arrow from the gridline toolbox to change the color of gridline, and a palette will be shown. The color which will be clicked, the gridline color will be changed accordingly.
8. Click the downward arrow below the gridlines diagram from the toolbox to remove the gridline from the report, and samples of different gridlines will be shown. Click 'None' at the bottom of the sample. The gridline imposed on the report will be removed.

After making the gridline thick or thin, imposing color on the lines and doing other requisite works, click outside the top margin, and the selection of gridline will no more be viewed.

Exercise

1. Which of the following pieces of Software is used to find out a piece of information out of a huge store?

   A. Database Software B. Spreadsheet Software

   C. Presentation Software D. Word Processing Software

2. Which one of the following is used to fix the shape of a Field Name?

   A. Create B. Field name

   C. Field Size D. Design View

3. By using a Database Programme –

   i. the annual accounts and the information on production can be preserved easily.

   ii. the presentation of information can be faster.

   iii. the required records can be found easily.

Which one is correct?

A. i & ii B. i & iii

C. ii & iii D. i, ii & iii

Read the chapter below, and answer the question nos. 4 & 5:

Maleka Begum is the owner of a Garments Factory in Bangladesh. She wants to use computers for the smooth management of her company.

4. Which piece of Software is suitable for Maleka Begum?

A. Database Software B. Spreadsheet Software

C. Presentation Software D. Word Processing Software

5. By using the software, Maleka Begum will be able to –

i. keep the information updated.

ii. add new information.

iii. reduce the costing of office management.

Which one is correct?

A. i & ii B. i & iii

C. ii & iii D. i, ii & iii

6. Describe the process of inserting a new field in the above Database.

7. 'Database Management can enhance speed in the official works of a company.' Discuss.

The End

2019
Academic Year
9-10 ICT

রূপকল্প ২০২১ বাস্তবায়নে তথ্যপ্রযুক্তির কোনো বিকল্প নেই
–মাননীয় প্রধানমন্ত্রী শেখ হাসিনা

নারী ও শিশু নির্যাতনের ঘটনা ঘটলে প্রতিকার ও প্রতিরোধের জন্য ন্যাশনাল হেল্পলাইন সেন্টারে ১০৯ নম্বর-এ (টোল ফ্রি, ২৪ ঘণ্টা সার্ভিস) ফোন করুন

Ministry of Education

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